Annex A - Statement of Work

1. Title

Staff housing, Wildhorse, AB.

2. Objective

Design and build an 8 person dormitory style home for staff housing at the port of Wildhorse. Intent of this process is for the contractor to build this off site and deliver to the port. 3 floor plan samples have been included with this statement of work as an example of what we are looking for.

3.1 Scope of Work

- a. Design, build, transport and install dorm style housing unit at the port of Wildhorse, AB.
- b. The trailer must meet CAN/CSA-Z241 SERIES-03 (latest editionneed to be specific, which edition will you use?) standards and the National building Code.
- c. Contractors are to provide floor plan of proposed building along with quote. <u>Will this be evaluated?</u> Or just for information?

3.2 Specifications:

The home must be equipped with what is considered standard amenities for the industry, and must include and recommend removing as this cannot be evaluated, subjective meet or exceed the following specifications:

3.2.1 Size/floor plan

- a. Minimum of 1,500 sq ft. Intent is to allow contractors to build within their parameters and be creative. Thanks for this info, it is helpful to me, but we will remove for solicitation. —E.g. 2 smaller units could be delivered to site and joined together on site. May be one unit or 2 smaller units to meet minimum 1500 sq. ft.
- b. 8 bedrooms, minimum of 6.5 m2 or 70 square feet. Each room to include a small closet. Do we care how small? Bedroom doors to be individually locked and keyed. Each bedroom must have an operable window.
- E. Full kitchen with 2 stoves and 2 fridges
- d. Living/dining area required. Minimum 23.2 m2 or 25 square feet
- e. 2 wash/locker rooms (male and female) required. Do you want 2 female and 2 male. Or one of each for a total of 2? Do you mean 2 washrooms/locker rooms?—Each washroom to have minimum 2 showers, women's to have 2 toilets. Men's can have two toilets or one toilet and one urinal s (men's ean be one toilet and one urinal) and Each washroom to include double sink in vanity with mirror. Toilets are to be separated with partitions and include closable doors.
- f. Laundry room can be separate or included as part of the mechanical room
- g. Mechanical room accessible from inside and out
- h. One vestibule/mud room with 8 coat hooks and boot storage for 8 persons

3.2.2 Exterior

- a. Entire exterior to be steel wrapped including bottom. Can you send me specs of a trailer that has this?
- b. Home is to be set on steel skid frame like what is used on oilfield dorm trailers. This will not be set on footings or piles but rather rest on the skids.
- c. One frost free tap
- d. Primary entry doors to be 36" and secondary interior? doors 32".

- e. Light at each entrance door
- f. Two exterior GFI receptacles, one on each side of home
- g. Installed dryer vent to accommodate gas dryer.

Do you require a minimum R rating on exterior? Ex. R40 or does the steel wrapped provide sufficient insulation?

3.2.3 Interior

- a. Minimum R40 insulation in roof. Is roof exterior and should be listed in exterior?
- b. Minimum R20 insulation in walls.
- c. Minimum R20 insulation in floor.
- d. Water shut off valves throughout? water shut off valves on what? all sinks, toilets?
- e. Dual pane Low E Argon filled operable windows and sills complete with screens
- f. High quality linoleum or other vinyl style flooring throughout the trailer define other vinyl style. Define high quality. Or just leave as linoleum or vinyl flooring.
- g. Pre finished interior doors
- h. Blinds or shades on all windows
- i. Pre wired for telephone hook-up. Phone to be located in living room area
- j. Pre wired for satellite TV hook-up. In living room and each bedroom
- k. Laminate counter tops
- 1. Solid wood cupboards
- m. Dual steel sink in kitchen
- n. Plumbed for washer, gas hook ups for dryer
- o. Plumbing in kitchen for dishwasher, but they are to include DW. So is this necessary?
- p. Floor drains in washrooms and mechanical room

3.2.4 Appliances to be supplied

- a. 2 full size electric oven/stoves define full size
- b. 2 fridges, minimum 20 cubic feet
- c. Dishwasher if you require plumbing, we would say built-in dishwasher. You don't want a portable one...?
- d. Washing machine
- e. Gas dryer
- f. Microwave

3.2.5 Safety

- a. Hard wired carbon monoxide/smoke detectors in main living area as well as each bedroom
- b. Fire extinguishers throughout as per fire code

3.2.6 Mechanical & Electrical

- a. Minimum 40 gallon gas water heater or suitable gas tank-less water heater for size of the building
- b. High efficient gas furnace suitable to the size of the building. Do we need to define high efficient?
- c. Air Conditioning unit suitable to the size of the building. Define suitable to size
- d. Minimum 100 amp electrical service panel
- e. 2 or 3 dual electrical plugs in each bedroom. 2 or 3? Minimum 2 dual electrical plugs in each bedroom?
- f. Ceiling light fixtures and ambiance lighting. Where are their ceiling light fixtures? And what is ambiance lighting. I have googled it and there is a company called Ambiance Lighting. Someone may want to know if that is what you mean... so, we would need to define what we mean by ambient lighting.

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From Wikipedia... Ambient lighting can refer to:

- Available light in an environment
- Low-key lighting, a photographic technique using a single key light
- A type of lighting in computer graphics

It is the combination of light reflections from various surfaces to produce a uniform illumination called the ambient light.

£

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3.2.7 Services

- a. Required services are electricity, gas, phone, satellite, water and sewer.
- e-b_All services are to enter into the mechanical room through the wall or the floor
- $\underline{\text{d.}\underline{c.}} \ \underline{\text{Required services are electricity, gas, phone, satellite, water and sewer.}$
- e-d. Contractor will need to provide a solution for water and sewer lines to keep them from freezing in winterso they don't freeze in winter.

Installation and Set up. You mentioned that there is installation required. What does contractor need to do. If this is on skirds, then no skirting? Do they just drop on skids and level?

Are you going to want documentation to show each of these requirements are met? Or are we going to do allow contractor to indicate MET or NOT Met and comment? I think for this requirement, since they may have to build, they wouldn't have documentation so indicating that they meet the requirement will be sufficient. They can provide comment.

Can you nut into table:

ltem	Description	Met	Not Met	Comment		For
					100	
						\

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	RC-04 INTERNAL ORDER NUMBER REQUEST					
	REGIONAL INPUT					
Date:	e: January 7th, 2016					
Requestor:	Telephone: 204-983-4403					
Description of work to be done: (replacement of						
counter, installation of PIL booth, etc.)	AB: Wildhorse POE - New Residence Trailer Phase 1 - Initiation					
		X				
	Phase 2 - Feasibility & Planning	X				
	Phase 3 - Analysis & Design	X				
	Phase 4 - Construction	X				
	Phase 5 - Post Construction	X				
Project or Initiative:	Replacement of housing due to health and Safety issues					
Asset Class	Asset Under Construction (new facility)	X				
	Fit up/Renovation/Environmental Work at Existing Asset					
	Leasehold Improvements (fit up of leased facilities - date of end of lease needed)					
	Work and Infrastructure (parking lots, garages, roads, lighting, guardrails, sidewalks, fences, landscaping, sewage, docks & Wharves & piers, bridges, overpasses, etc.)					
	Machine and Equipment	П				
	Furniture					
	Informatics, Equipment and Parts	П				
Complete Address of Location of Work Being Done:	Customs Port of Wildhorse RR #1 Wildhorse via Manyberries, AB T0K 1L0					
Internal Order Description (max 50 spaces):	AB: Wildhorse POE - Residence					
Responsible Cost Centre:	255076000					
Functional Area:	35210					
Project Officer:	Lyle Simonson	Telephone: 306-780-8372				
Date - Start of Work:	April 1st, 2015	•				
Date - Completion of Work:	March 31st, 2016					
Region:	Prairies Region					
Fund:	6001					
	HQ INPUT:					
Internal Order #: Group Order #:	411256					
Asset Under Construction #:						
Asset Master Record #:						





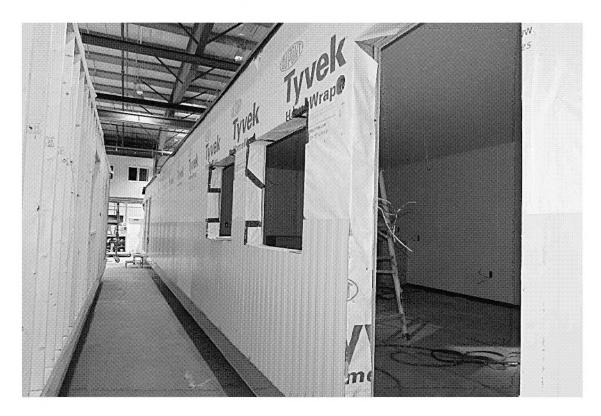


















From: Simonson, Lyle

Sent: October 19, 2015 09:45 AM

To: Michael, Connie **Subject:** wildhorse trailer

Attachments: Staff housing photos updates @ Oct 16, 2015.pdf

Almost done!

Lyle Simonson

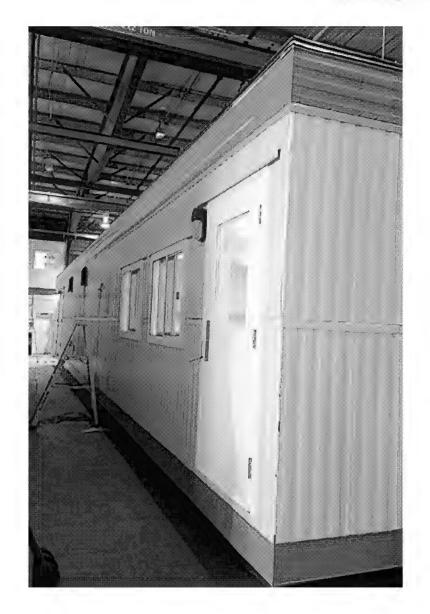
Facility Officer / Operations Branch
Canada Border Services Agency
<u>Lyle.Simonson@cbsa-asfc.gc.ca</u> / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations
Agence des services frontaliers du Canada

<u>Lyle.Simonson@cbsa-asfc.gc.ca</u> / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237



HORIZON NORTH













HORIZON NORTH













From: Michael, Connie

Sent: March 16, 2017 07:54 AM

To: Chenard, Charles
Cc: Lebel, Roch

Subject: FW: Pest Control Wild Horse

To keep you informed.

From: John Mayer [mailto:John.Mayer@pwgsc-tpsgc.gc.ca]

Sent: March 15, 2017 5:54 PM

To: Michael, Connie <Connie.Michael@cbsa-asfc.gc.ca>; ABRAHAM, GILLES <GILLES.ABRAHAM@cbsa-asfc.gc.ca>; Kelsey Debets <Kelsey.Debets@tpsgc-pwgsc.gc.ca>; Sheldon Jacobs <Sheldon.Jacobs@tpsgc-pwgsc.gc.ca>; Walter Espinoza <Walter.Espinoza@brookfieldgis.com>

Cc: Cathy Blanch < Cathy.Blanch@brookfieldgis.com>; Dumitrescu, Maria: PWGSC / TPSGC

<maria.dumitrescu@pwgsc-tpsgc.gc.ca>; Janeczko, Lorna: PWGSC / TPSGC <lorna.janeczko@pwgsc-tpsgc.gc.ca>

Subject: RE: Pest Control Wild Horse

Hi All,

Please note I had a discussion with BGIS this afternoon and BGIS has not suspended any services. We need to be mindful of where the messaging is originating and BGIS is quite aware of their responsibilities to provide prudent Property and Facility Management Services. While attempting to provide prudence and probity BGIS also ensuring sound stewardship with Client Funding, which at this time we are looking at an overspend within CBSA. BGIS will ensure the Port of Wildhorse receives the attention it requires to ensure a safe, healthy and productive work environment for CBSA.

Thank you.

John Mayer, RPA

Regional Manager, Asset & Facility Management Services
Public Services and Procurement Canada / Government of Canada
john.mayer@pwgsc-tpsgc.gc.ca / Tel:306 -780-5032/Cell: 306-541-7011

Gestionnaire régional, Services de gestion des biens et des installations Services publics et Approvisionnement Canada / Gouvernement du Canada john.mayer@pwgsc-tpsgc.gc.ca / Tél:306-780-5032/ Tél. cell: 306-541-7011

From: Kelsey Debets [mailto:Kelsey.Debets@tpsgc-pwgsc.gc.ca]

Sent: Wednesday, March 15, 2017 3:18 PM

To: Walter Espinoza < Walter. Espinoza @brookfieldgis.com >

Cc: Cathy Blanch <Cathy.Blanch@brookfieldgis.com>; Oleg Vecherya <Oleg.Vecherya@brookfieldgis.com>; John

Mayer < John. Mayer@pwgsc-tpsgc.gc.ca >; Sheldon Jacobs < Sheldon. Jacobs@tpsgc-pwgsc.gc.ca >

Subject: RE: Pest Control Wild Horse

Hi Walter.

CBSA is continuing to question the level of service that is currently being provided (the Operations client is escalating within their Department – see attached email). In follow up to our conference call yesterday and your email below, you stated that you are obtaining quotes to provide the pest control at Wild Horse at a reduced cost. When can we expect this service to be completed?

Regards,

Kelsey Debets

Asset Manager, Asset & Facility Management Services
Public Services and Procurement Canada / Government of Canada
Kelsey.Debets@pwgsc-tpsgc.gc.ca / 204-983-5849 / cell 204-891-3762

Gestionnaire d'Actifs, Services de gestion des biens et des installations Services publics et Approvisionnement Canada / Gouvernement du Canada Kelsey.Debets@tpsgc-pwgsc.gc.ca / 204-983-5849 / cell 204-891-3762

From: Walter Espinoza [mailto:Walter.Espinoza@brookfieldgis.com]

Sent: March-14-17 11:43 AM

To: Sheldon Jacobs <Sheldon.Jacobs@tpsgc-pwgsc.gc.ca>

Cc: Cathy Blanch < Cathy.Blanch@brookfieldgis.com >; Kelsey Debets < Kelsey.Debets@tpsgc-pwgsc.gc.ca >; Oleg

Vecherya < Oleg. Vecherya@brookfieldgis.com >

Subject: RE: Pest Control Wild Horse

Good Day Sheldon,

I must apologies for our vendors speaking to CBSA but I can't control their long standing relationship. In any event, I have called the vendor and informed them of our terms and conditions when working with BGIS directly.

PSPC is aware we are currently in a deficit so we are finding way to lower the cost in which some contracts may have been put on hold but that doesn't mean we are not managing your sites. Currently, we are obtaining quotes to provide the service at a lower cost as the contract was novated to us from CBSA. Please rest assure all repairs will be delay until April but all emergency WO#/NSCC calls will be actioned or go back to CBSA/PSPC to find funds to perform the work.

Thank you and any other questions give me a call.

Walter Espinoza Property Manager NWT-AB- RP1-PWGSC Walter.Espinoza@Brookfieldgis.com Cell Phone 587.783.8665



Visit our PWGSC Tenant Website TENANT CONNECTION Link

Reminder to contact NSCC for all building issues and serivce requests @ 1-800-463-1850

From: Sheldon Jacobs [mailto:Sheldon.Jacobs@tpsgc-pwgsc.gc.ca]

Sent: Monday, March 13, 2017 10:29 AM

To: Walter Espinoza < <u>Walter.Espinoza@brookfieldgis.com</u>>

Cc: Cathy Blanch < Cathy.Blanch@brookfieldgis.com >; Kelsey Debets < Kelsey.Debets@tpsgc-pwgsc.gc.ca >

From: ABRAHAM, GILLES

Sent: March 16, 2017 09:14 AM

To: Mayer, John: PWGSC / TPSGC; Michael, Connie; Kelsey Debets; Sheldon Jacobs;

Walter Espinoza

Cathy Blanch; Dumitrescu, Maria: PWGSC / TPSGC; Janeczko, Lorna: PWGSC / TPSGC;

Wozny, Brad

Subject: RE: Pest Control Wild Horse

Thanks John,

It is good to have this clarified.

I understand being concerned with messaging however, when our clients don't receive notice or information of possible service interruptions, we can see where things go awry quickly.

The clients who are usually the first to notice something is amiss will start to look into matters themselves – especially trained investigators;)

Proactive messaging would take care of all of these issues as we can, in turn, prepare our clients. It's when expected services suddenly stop that our clients become concerned.

Let us know how we can help.

Thanks.

Gilles Abraham, C.I.M.; C.Mgr

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region

Canada Border Services Agency / Government of Canada

Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des prairies Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

From: John Mayer [mailto:John.Mayer@pwgsc-tpsgc.gc.ca]

Sent: March 15, 2017 4:54 PM

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Mayer < John.Mayer@pwgsc-tpsgc.gc.ca >; Sheldon Jacobs < Sheldon.Jacobs@tpsgc-pwgsc.gc.ca >

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Vecherya < Oleg. Vecherya@brookfieldgis.com >

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Cc: Cathy Blanch <Cathy.Blanch@brookfieldgis.com>; Kelsey Debets <Kelsey.Debets@tpsgc-pwgsc.gc.ca>

Subject: FW: Pest Control Wild Horse

Importance: High

Good morning;

Please see the two emails below.

Can you kindly advise why service is being suspended? Is it due to lack of funds? Or is there another reason?

BGIS is contracted to provide Property Management Services to these ports.

There has to be away to continue service if funds are getting low.

Some of these services, such as pest control, are required on an ongoing basis so the clients are not over run by rodents.

Kindly provide a response by 4:00 PM MST tomorrow, March 14, 2017.

Thank you

Sheldon Jacobs

Property and Facility Manager, Asset Performance
Public Services and Procurement Canada / Government of Canada
sheldon.jacobs@pwgsc-tpsgc.gc.ca / Tel: 306-975-6936 / Cel: 306-716-0351

Gestionnaire d'immeubles et d'installation, Rendement de l'actif Services publics et Approvisionnement Canada / Gouvernement du Canada sheldon.jacobs@pwqsc-tpsqc.qc.ca / Tel: 306-975-6936 / Cel: 306-716-0351

From: ABRAHAM, GILLES [mailto:GILLES.ABRAHAM@cbsa-asfc.gc.ca]

Sent: March-13-17 9:13 AM

To: Candice Oremba < <u>Candice.Oremba@pwgsc-tpsgc.gc.ca</u>>; Sheldon Jacobs < <u>Sheldon.Jacobs@tpsgc-pwgsc.gc.ca</u>>

Cc: Michael, Connie < Connie < Connie Connie

Subject: FW: Pest Control Wild Horse

Importance: High

Hi Candace and Sheldon,

We have received another notice from our clients that BGIS has "suspended service".

We are receiving these types of messages from clients across the prairie region and it is understandably upsetting them. This of course, causes issues for us to work on resolutions – issues that the RP1 contract was put in place to manage on our behalf.

We are not receiving notice that BGIS is suspending or stopping services either. Local management at Wild Horse called the contractor directly because they didn't make their monthly visit and he found out from the contractor. Although local management should be calling the NSCC, I don't believe we would have received an answer.

We need to get BGIS back on providing services to our POE's. It is not reasonable to have to wait a month and a half to have things like pest control, potable water issues, sewage issues, etc. dealt with.

Let me know what thoughts are and if there is anything we can do to assist getting service back on track.

Thanks,

Gilles Abraham, C.I.M.; C.Mgr

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region Canada Border Services Agency / Government of Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des prairies

Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

From: Anderson, Darryl

Sent: March 13, 2017 9:19 AM

To: Simonson, Lyle < Lyle.Simonson@cbsa-asfc.gc.ca >; ABRAHAM, GILLES < GILLES.ABRAHAM@cbsa-

asfc.gc.ca>

Cc: Singer, Steve <Steve.Singer@cbsa-asfc.gc.ca>

Subject: Pest Control Wild Horse

Morning all,

I just got word yesterday the BGIS has suspended the routine visits of KP pest control and told him he was not required.

As I am sure you know we have a huge issue with rodents.

The staff are reporting new droppings in the POE and I have no desire to reopen all of the OSH/union issues again because BGIS thinks we don't need them.

I am at a loss as to why they did this but it seems to be the way our service from them is going.

If we don't get KP back on site we will quickly become overrun again.

Can we move this forward. Thx Darryl

From:

Sent:

November 3, 2015 08:17 AM

November 3, 2015 08:17 AM

Michael, Connie; Strub, Nathalie

Simonson, Lyle; Disipio, Martha

Subject:

RE: Wildhorse snake fence

Attachments: IO Request Wildhorse snake fence.xls

Your IO for the Snake Fence at Wildhorse is 411266.

Martha, please create an AMC for this IO. Thanks!

Francine Beauchamp
Gestionnaire int., Services à la Direction
A/Manager, Directorates Services
Infrastructure et opérations environnementale/Infrastructure and Environmental Operations
Direction générale du contrôle/Comptrollership Branch
Agence des services frontaliers du Canada/Canada Border Services Agency

From: Michael, Connie

Sent: November 2, 2015 2:28 PM

To: Beauchamp, FrancineJ; Strub, Nathalie

Cc: Simonson, Lyle

Subject: FW: Wildhorse snake fence

Good afternoon Francine – Lyle has completed an IO request for a capital project for the snake fence at Wildhorse. This project will be complete this fiscal year.

Once you have created the IO, Lyle will set up the funds commitment to ensure it is in the P7 projections.

Thanks,

Connie

From: Simonson, Lyle

Sent: November 2, 2015 2:22 PM

To: Michael, Connie

Subject: RE: Wildhorse snake fence

attached

Lyle Simonson

Facility Officer / Operations Branch
Canada Border Services Agency
Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations Agence des services frontaliers du Canada Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237 From: Michael, Connie

Sent: October 30, 2015 9:11 AM

To: Simonson, Lyle

Subject: FW: Wildhorse snake fence

Hi Lyle — Have not forgotten the request for coding for this project. Can you please complete the Internal Order request form and send to me to give to Francine. Francine will then create the IO for you. It will be capital IO.

You can send to Francine direct if you wish.

From: Michael, Connie

Sent: October 28, 2015 7:47 AM

To: Simonson, Lyle **Cc:** ABRAHAM, GILLES

Subject: RE: Wildhorse snake fence

Hi Lyle – Charge to O&M and I will have Francine create for you and then we can JV.

I will cc you and Gilles on the email I send to Francine requesting the IO to be created.

Thanks,

Connie

From: Simonson, Lyle

Sent: October 27, 2015 12:56 PM

To: Michael, Connie **Cc:** ABRAHAM, GILLES

Subject: RE: Wildhorse snake fence

I cannot find capital coding for this. Did you get it created?

Thanks,

Lyle Simonson

Facility Officer / Operations Branch
Canada Border Services Agency

Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations

Agence des services frontaliers du Canada

Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237

From: Michael, Connie

Sent: August 18, 2015 9:44 AM

To: Knapp, Tambrae **Cc:** Simonson, Lyle

Subject: RE: Wildhorse snake fence

Absolutely.

Lyle – I will create a capital IO and provide you with the coding to use.

Thanks,

Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada

Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

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From: Knapp, Tambrae

Sent: August 18, 2015 10:38 AM

To: Michael, Connie **Cc:** Simonson, Lyle

Subject: RE: Wildhorse snake fence

Hi Connie

Just a footnote – can you ensure this is done as a capital project – which shd be fine for fencing. Just not coded as repair.
thanks

Tambrae Knapp,

Executive Director, Infrastructure/Directrice exécutif, Infrastructure

Infrastructure and Environmental Operations, Comptrollership Branch/ Infrastructure et opérations environnementales, Direction générale du contrôle

Canada Border Services Agency/Agence des services frontaliers du Canada

Government of Canada/Gouvernemnt du Canada

tambrae.knapp@cbsa-asfc.gc.ca / Tel: 343-291-5825 / TTY: 866-335-3237

From: Michael, Connie

Sent: August 18, 2015 9:57 AM

To: Knapp, Tambrae **Cc:** Simonson, Lyle

Subject: FW: Wildhorse snake fence

Good morning Tambrae – I urgently require \$25K to proceed with a rattlesnake fence around the port of Wildhorse. Please note that if we do not proceed, we will be faced with work stoppage and it has escalated to Health and Safety concerns.

Please provide your approval to proceed prior to winter coming.

Thanks,

Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada

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Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada

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From: Simonson, Lyle

Sent: August 18, 2015 8:50 AM

To: Michael, Connie

Subject: Wildhorse snake fence

The superintendent and chief have requested a snake fence be put up at Wildhorse to try deter rattlesnakes from coming under the canopy in the future. The fence at Carievale cost about \$11,000 to set up. Wildhorse will be almost 3 times as long. However the one at Carievale was put up in the winter so they had to heat the ground up first to dig posts and put in the fence so that increased cost significantly. I would guess we are looking at about \$25k for the fence and Brookfield's fees.

Can you see if we can get funding for this project? I guess this could be classed as a major health and safety issue.

Thanks,

Lyle Simonson

Facility Officer / Operations Branch
Canada Border Services Agency
<u>Lyle.Simonson@cbsa-asfc.gc.ca</u> / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations
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(CAPITAL INTERNAL ORDER NUMBER REQUEST (RC-04)						
	DEMANDE D'ORDRE INTERNAL CAPITAL (RC-04)						
Date:	REGIONAL INPUT / ENTRÉE RÉGIONALE 02-Nov-15						
Requestor / Requérant :	Lyle Simonson	Telepho 306-780-837	one / Téléphone :				
Description of work to be done: (e.g. replacement of counter, installation of PIL booth, etc.) / Description du travail a exécuté (ex : achat de nouveaux comptoirs, installation de kiosque LIP, etc.)							
	Phase 1 - Initiation						
	Phase 2 - Feasibility & Planning / Faisibilité et planfications						
	Phase 3 - Analysis & Design / Analyse et design	X					
	Phase 4 - Construction						
	Phase 5 - Post Construction						
	Phase 6 - BOMA Assessment / Cotisation BOMA						
Project or Initiative / Projet ou initiative :							
Asset Class / Classification d'actif :	Asset Under Construction (new facility) / Actif en construction (nouvelle installation)						
	Fit up Project at Custodial Facility / Travaux d'aménagement a nos établissements :	X					
	Leasehold Improvements (Fit Up of Leased Facility) / Améliorations locatives (Travaux d'aménagement a une location a bail) :						
	Occupancy Instrument Detail / Détail de l'instrument d'occupation						
	Provide the lease dates here / Fournir les date du bail ici						
	Work and Infrastructure (parking lots, garages, roads, lighting, guardrails, sidewalks, fences, landscaping, sewage, docks, bridges, overpasses, etc.) / Travail et infrastructure (stationnements, garages, routes, éclairage, glissières de sécurité, trottoirs, clotures, aménagement de paysage, égouts, quais, ponts, passages supérieurs, etc.)	x					
	Machine and Equipment / Équipement et machine :						
	Furniture / Fourniture :						
	Informatics, Equipment and Parts / Informatiques, équipements et pièces :						
Complete Address of Location of Work Being Done							
/Addresse complète de la location ou le travail se fera :	Highway 41 South, RR 1, Wildhorse, AB T0K 1L0						
de l'ordre interne (max de 50 frappes) :	rnal Order Description (max 50 spaces) / Description ordre interne (max de 50 frappes) : Wildhorse snake fence						
Responsible Cost Centre / Centre de coût responsable :	255076000						
Functional Area / Domaine fontionnel :	34210						
Project Officer / Agent de projet :	Late Consessed		one / Téléphone :				
Work began on (date) / Le travail a débuté le (date) :	Lyle Simonson Has not started	306-780-837	2				
Work was completed on (date) / Le travail a été complété le (date) :	N/A						
Region / Région :	Prairies						
Fund / Fond :	6001						
	HQ INPUT:						
Internal Order Number / Numéro d'ordre interne :	411266						
Group Order Number / Numéro du groupe d'ordre interne :							
Asset Under Construction Number / Numéro de l'actif en							
construction :							
Asset Master Record Number / Numéro de la fiche							
d'immobilisation :							

From: Simonson, Lyle

Sent: August 18, 2015 10:23 AM

To: Walter Espinoza (Walter.Espinoza@brookfieldgis.com)

Cc: Michael, Connie **Subject:** Wildhorse snake fence

Walter,

After the incident with the rattlesnake (this is not the first time) we have secured funding to put up a snake fence. Note due to health and safety concern this has to be done ASAP. If possible before the end of September as the snakes are going to be on the move very soon. I'm estimating the cost will be about 25K. Is this something you can get done for us?

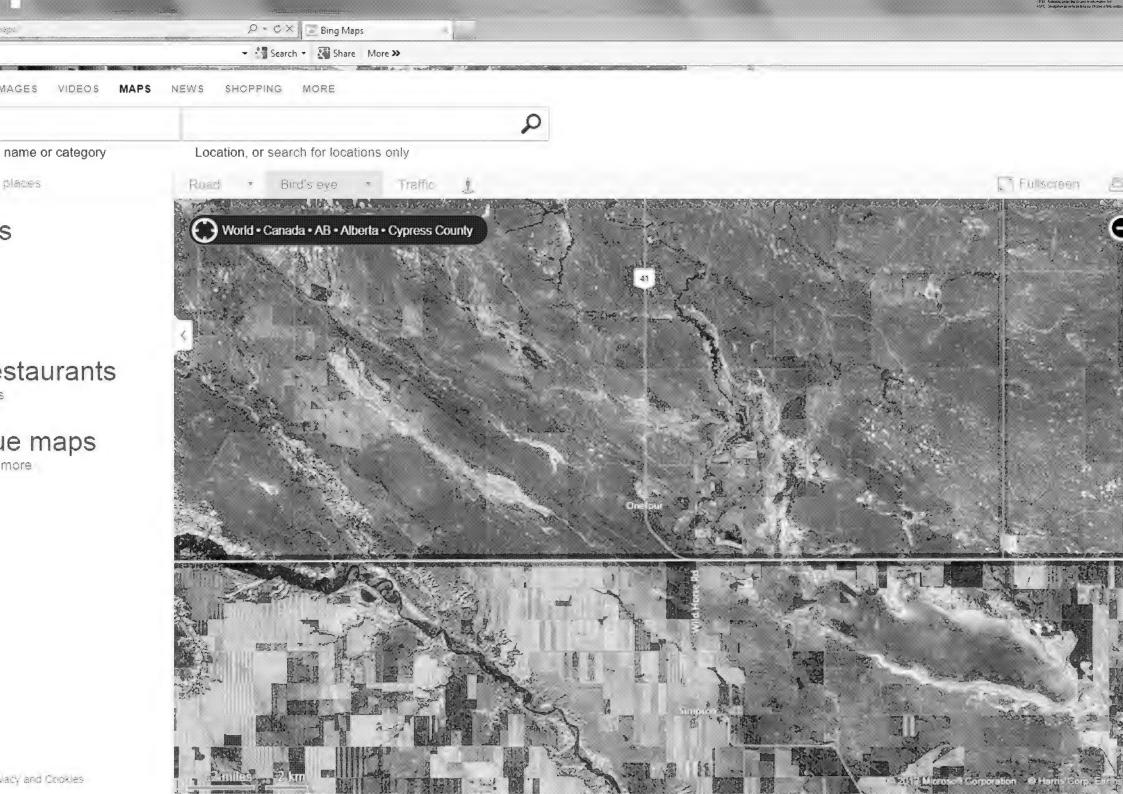
Thanks,

Lyle Simonson

Facility Officer / Operations Branch
Canada Border Services Agency
<u>Lyle.Simonson@cbsa-asfc.gc.ca</u> / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations Agence des services frontaliers du Canada <u>Lyle.Simonson@cbsa-asfc.gc.ca</u> / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237





SERVICING!

WHAT?

REGULAR MAINTENANCE AND SERVICE ON WATER CONDITIONING EQUIPMENT, WATER PURIFICATION EQUIPMENT AND HUMIDIFIERS.

WHERE?

CANADA CUSTOMS AND REVENUE AGENCY, WILDHORSE BORDER CROSSING, OFFICE BUILDING AND STAFF HOUSES.

WHEN?

ON REGULAR BASIS AS OUTLINED IN FOLLOWING INSTRUCTION SHEETS.

WHY?

TO MAINTAIN EQUIPMENT SO THAT IT PERFORMS AS DESIGNED. THIS WILL PREVENT UNDUE WEAR ON THE EQUIPMENT AND WILL PROVIDE A SAFE POTABLE WATER SYSTEM.

WHO?

ON-SITE OFFICERS STATIONED AT THE BORDER CROSSING AND CONTRACT CLEANING STAFF. NOTE: ANNUAL FULL SERVICES WILL BE PROVIDED BY STENGER'S PLUMBING & HEATING LTD AS ARRANGED WITH CALGARY OFFICE.

HOW?

REGULAR SERVICING TO BE DONE AS OUTLINED ON THE FOLLOWING 8 SERVICE INSTRUCTION SHEETS:

NOVATEK MULTI MEDIA FILTER:

SETTING THE CLOCK:

- IF THERE IS A POWER OUTAGE IT WILL CAUSE THE CLOCK TO BE SLOW.
- IT IS VERY IMPORTANT THAT THE TIME ON THE CLOCK IS CURRENT SO THE SOFTENER REGENERATES AT THE CORRECT TIME.
- SET THE CLOCK AS FOLLOWS:
 - LOOSEN THE TWO THUMB SCREWS LOCATED ON THE SIDES OF THE VALVE COVER.
 - REMOVE THE COVER FROM THE VALVE.
 - FOLLOW "SETTING THE 24-HOUR TIMER" INSTRUCTIONS ON PAGE 4 OF THE "NOVATEK AUTOMATIC WATER FILTERS OPERATION MANUAL" IN SECTION 6 OF THE SERVICE BINDER.
 - PUT THE VALVE COVER IN PLACE AND TIGHTEN THE $^{1}\!\!4$ " HEX HEAD SCREWS ON THE SIDES OF THE COVER.

NOVO DUPLEX WATER SOFTENER:

SETTING THE CLOCK:

- IF THERE IS A POWER OUTAGE IT WILL CAUSE THE CLOCK TO BE SLOW.
- SET THE CLOCK AS FOLLOWS:
 - LOOSEN THE TWO THUMB SCREWS LOCATED ON THE SIDES OF THE VALVE COVER.
 - REMOVE THE COVER FROM THE VALVE.
 - FOLLOW "SETTING THE TIME OF DAY" INSTRUCTIONS ON PAGE 6 OF THE "XT SERVICE MANUAL" IN SECTION 7 OF THE SERVICE BINDER.
 - PUT THE VALVE COVER IN PLACE AND TIGHTEN THE THUMB SCREWS ON THE SIDES OF THE COVER.

SALT IN BRINE TANK:

- ENSURE THAT THERE IS A MINIMUM OF TWO 20 KG BAGS OF SALT IN THE BRINE TANK.
- IF YOU NOTICE THAT THERE IS NO SALT IN THE BRINE TANK DO THE FOLLOWING:
- ADD AT LEAST ONE 20 KG BAG OF SOFTENER SALT.
- WAIT AT LEAST 4 HOURS FOR ENOUGH SALT TO DISSOLVE TO MAKE A STRONG ENOUGH BRINE SOLUTION TO ADEQUATELY REGENERATE THE SOFTENER.
- AFTER A MINIMUM OF 4 HOURS PUT THE SOFTENER INTO A MANUAL REGENERATION AS FOLLOWS:
 - FIRST MEDIA TANK:
 - LOOSEN THE TWO THUMB SCREWS LOCATED ON THE SIDES OF THE VALVE COVER.
 - REMOVE THE COVER FROM THE VALVE.
 - FOLLOW THE "MANUALLY INITIATING A REGENERATION" INSTRUCTIONS ON PAGE 6 OF THE "XT SERVICE MANUAL" IN SECTION 7 OF THE SERVICE BINDER.
 - PUT THE VALVE COVER IN PLACE AND TIGHTEN THE THUMB SCREWS ON THE SIDES OF THE COVER.
 - SECOND MEDIA TANK:
 - AFTER THE FIRST MEDIA TANK HAS REGENERATED YOU HAVE TO WAIT FOR AT LEAST 4 HOURS FOR ENOUGH SALT TO DISSOLVE TO MAKE A STRONG ENOUGH BRINE SOLUTION TO ADEQUATELY REGENERATE THE SECOND TANK.
 - AFTER A MINIMUM OF 4 HOURS PUT THE SOFTENER INTO A MANUAL REGENERATION, FOLLOW THE SAME INSTRUCTIONS AS FOR THE FIRST MEDIA TANK.

RES-UP FEEDER ON BRINE TANK:

- ENSURE THAT THERE IS ALWAYS RES-CARE SOLUTION IN THIS FEEDER.
- DO NOT FILL ANY HIGHER THAN THE MARK AT THE TOP OF THE FEEDER.

NOVO DUPLEX TANNINS REMOVAL WATER SOFTENER:

SETTING THE CLOCK:

- IF THERE IS A POWER OUTAGE IT WILL CAUSE THE CLOCK TO BE SLOW.
- SET THE CLOCK AS FOLLOWS:
 - LOOSEN THE TWO THUMB SCREWS LOCATED ON THE SIDES OF THE VALVE COVER.
 - REMOVE THE COVER FROM THE VALVE.
 - FOLLOW "SETTING THE TIME OF DAY" INSTRUCTIONS ON PAGE 6 OF THE "XT SERVICE MANUAL" IN SECTION 7 OF THE SERVICE BINDER.
 - PUT THE VALVE COVER IN PLACE AND TIGHTEN THE THUMB SCREWS ON THE SIDES OF THE COVER.

SALT IN BRINE TANK:

- ENSURE THAT THERE IS A MINIMUM OF TWO 20 KG BAGS OF SALT IN THE BRINE TANK.
- IF YOU NOTICE THAT THERE IS NO SALT IN THE BRINE TANK DO THE FOLLOWING:
- ADD AT LEAST ONE 20 KG BAG OF SOFTENER SALT.
- WAIT AT LEAST 4 HOURS FOR ENOUGH SALT TO DISSOLVE TO MAKE A STRONG ENOUGH BRINE SOLUTION TO ADEQUATELY REGENERATE THE SOFTENER.
- AFTER A MINIMUM OF 4 HOURS PUT THE SOFTENER INTO A MANUAL REGENERATION AS FOLLOWS:
 - FIRST MEDIA TANK:
 - LOOSEN THE TWO THUMB SCREWS LOCATED ON THE SIDES OF THE VALVE COVER.
 - REMOVE THE COVER FROM THE VALVE.
 - FOLLOW THE "MANUALLY INITIATING A REGENERATION" INSTRUCTIONS ON PAGE 6 OF THE "XT SERVICE MANUAL" IN SECTION 7 OF THE SERVICE BINDER.
 - PUT THE VALVE COVER IN PLACE AND TIGHTEN THE THUMB SCREWS ON THE SIDES OF THE COVER.
 - SECOND MEDIA TANK:
 - AFTER THE FIRST MEDIA TANK HAS REGENERATED YOU HAVE TO WAIT FOR AT LEAST 4 HOURS FOR ENOUGH SALT TO DISSOLVE TO MAKE A STRONG ENOUGH BRINE SOLUTION TO ADEQUATELY REGENERATE THE SECOND TANK.
 - AFTER A MINIMUM OF 4 HOURS PUT THE SOFTENER INTO A MANUAL REGENERATION, FOLLOW THE SAME INSTRUCTIONS AS FOR THE FIRST MEDIA TANK.

RES-UP FEEDER ON BRINE TANK:

- ENSURE THAT THERE IS ALWAYS RES-CARE SOLUTION IN THIS FEEDER.
- DO NOT FILL ANY HIGHER THAN THE MARK AT THE TOP OF THE FEEDER.

PENTEK SUMP FILTER LOCATED DOWNSTREAM OF THE NOVO DUPLEX TANNINS REMOVAL WATER SOFTENER:

- REPLACE THIS FILTER MONTHLY OR SOONER IF REQUIRED. YOU CAN CONFIRM THAT IT SHOULD BE REPLACED SOONER BY TESTING AS FOLLOWS:
 - THERE'S A PRESSURE DIFFERENTIAL NEEDLE GAUGE LOCATED ON THE TOP OF THIS FILTER.
 - RUN COLD WATER AT A BASIN FAUCET AND CHECK THE NEEDLE GAUGE READING. IT WILL INDICATE THE CONDITION OF THE CARTRIDGE.
- REPLACE THE FILTER AS FOLLOWS:
 - PLACE A 20-LITER BUCKET ON THE FLOOR BELOW THE WATER FILTER TO CATCH SPILLED WATER.
 - CLOSE BALL VALVE 9 ON THE INLET SIDE OF THE ULTRA VIOLET STERILIZER.
 - CLOSE BALL VALVES 6A AND 7A TO ISOLATE THE SUMP FILTER FROM THE WATER DISTRIBUTION SYSTEM.
 - PUSH DOWN ON THE RED PRESSURE RELEASE BUTTON LOCATED ON TOP OF THE FILTER BEHIND THE NEEDLE GAUGE.
 - USE THE BLACK SPANNER WRENCH (HANGING ON THE WALL BESIDE THE FILTER) TO LOOSEN THE SUMP. PUT THE WRENCH ON THE FILTER WITH THE HANDLE POINTING TO THE RIGHT SIDE OF THE SUMP AND PULL THE HANDLE TOWARDS YOURSELF. PULL FIRMLY; DON'T JERK ON THE HANDLE! WHILE PULLING ON THE HANDLE WITH YOUR RIGHT HAND, HOLD AGAINST THE SUMP WITH YOUR LEFT HAND TO STEADY THE FILTER ASSEMBLY.
 - AFTER THE SUMP IS LOOSENED YOU CAN REMOVE IT BY HAND WITHOUT THE USE OF THE WRENCH.
 - TIP THE SUMP OVER POURING THE WATER AND THE OLD FILTER INTO THE 20-LITER BUCKET.
 - RINSE THE SUMP USING WATER FROM THE TEST POINT VALVE #6 LOCATED TO THE LEFT OF THE WATER FILTER AND POUR THE WATER INTO THE 20-LITER BUCKET.
 - CLEAN THE OLD SILICONE GREASE OFF THE O-RING AND THE FILTER HOUSING USING A SHOP TOWEL.
 - APPLY A "LIGHT" COATING OF SILICONE GREASE (SUPPLIED IN BROWN VIAL) ON THE SUMP O-RING.
 - FILL THE SUMP 1/3 FULL OF WATER AND ADD TWO TABLESPOONS OF HOUSEHOLD BLEACH TO THE WATER. THOROUGHLY SCRUB THE INTERIOR OF THE SUMP WITH A BRUSH OR SPONGE AND THEN RINSE THOROUGHLY.
 - ADD TWO TABLESPOONS OF HOUSEHOLD BLEACH TO THE SUMP FILTER.
 - TEAR THE WRAPPING OFF ONE END OF A NEW 5-MICRON SEDIMENT FILTER BEING CAREFUL NOT TO CONTAMINATE THE FILTER BY TOUCHING IT WITH YOUR HANDS.
 - INSERT THE 5 MICRON SEDIMENT FILTER INTO THE SUMP WHILE HOLDING THE OUTSIDE OF THE PAPER WRAPPING SO YOUR HAND DOES NOT TOUCH AND CONTAMINATE THE FILTER. REMOVE THE BALANCE OF THE WRAPPING FROM THE FILTER AS YOU INSERT IT INTO THE SUMP
 - INSTALL THE SUMP BY HAND AND "JUST MAKE IT SNUG". DO NOT USE A WRENCH TO TIGHTEN THE SUMP OR IT WILL BE NEARLY IMPOSSIBLE TO REMOVE IT THE NEXT TIME THE FILTER HAS TO BE CHANGED.
 - "SLOWLY" OPEN VALVE 6A TO ALLOW WATER TO ENTER THE FILTER SUMP AND "PRESSURE UP".
 - CHECK FOR LEAKS ON THE FILTER O-RING.
 - LEAVE THE SYSTEM IN THIS POSITION FOR TWENTY MINUTES TO ALLOW THE TWO TABLESPOONS OF BLEACH TO "WORK".
 - HOLD THE 20-LITER BUCKET IN PLACE UNDER VALVE 7.

- SLOWLY OPEN VALVE 7A TO FLUSH THE BLEACH WATER FROM THE SUMP INTO THE BUCKET. "BE CAREFUL NOT TO ALLOW THE BLEACH WATER TO SPLASH ONTO YOUR BODY, ESPECIALLY INTO YOUR EYES!"
- CLOSE VALVE 7 AFTER FLUSHING THE BLEACH FROM THE FILTER SUMP.
- OPEN VALVE 9 TO PUT THE SYSTEM INTO OPERATION.
- RECORD THE DATE OF THE FILTER CHANGE IN THE WATER FILTER MAINTENANCE LOG.

STERILIGHT COBALT ULTRA VIOLET STERILIZER:

- THE DISPLAY ON THIS ULTRA VIOLET STERILIZER SHOWS THE ULTRA VIOLET OUTPUT AS A PERCENTAGE. THE MAXIMUM OUTPUT READING IS 99%. THE SYSTEM IS EFFECTIVE WHEN THE OUTPUT IS BETWEEN 50% AND 99%. IF THE OUTPUT DROPS BELOW 50% THE SYSTEM WILL GO INTO THE ALARM MODE AND WILL CLOSE THE SOLENOID VALVE ON THE INLET SIDE OF THE ULTRA VIOLET STERILIZER. THIS WILL PREVENT SUPPLY WATER FROM PASSING THROUGH THE ULTRA VIOLET STERILIZER.
- THE MANUFACTURER RECOMMENDS THAT THE LAMP SHOULD BE REPLACED ANNUALLY. THE CONTROLLER TRACKS THE NUMBER OF DAYS OF OPERATION OF THE LAMP AND THE CONTROLLER. THE DEFAULT SCREEN WILL DISPLAY THE TOTAL LAMP LIFE REMAINING (IN DAYS). THE CONTROLLER WILL COUNT DOWN THE NUMBER OF DAYS REMAINING UNTIL THE LAMP REQUIRES CHANGING (365 DAYS TO 1 DAY). AT "0" DAYS THE CONTROLLER WILL DISPLAY "A3" ON THE DISPLAY AND WILL SUPPLY AN INTERMITTENT AUDIBLE CHIRP (1 SECOND ON, 5 SECONDS OFF), INDICATING THE NEED TO CHANGE THE LAMP.
- THE QUARTZ SLEEVE AND THE SENSOR EYE SHOULD BE CLEANED FOR THE FOLLOWING TWO REASONS:
 - IF THE WATER TREATMENT EQUIPMENT (MULTI MEDIA FILTER, WATER SOFTENER AND TANNINS REMOVAL WATER SOFTENER) FAILS, THE QUARTZ SLEEVE AND THE SENSOR EYE ON THE ULTRA VIOLET STERILIZER COULD BECOME DIRTY CAUSING THE ULTRA VIOLET STERILIZER TO GO INTO ALARM MODE.
 - WHEN THE LAMP IS REPLACED ANNUALLY (AFTER 365 DAYS OF USE).
- CLEAN THE QUARTZ SLEEVE AND SENSOR EYE AS FOLLOWS:
 - UNPLUG THE ULTRA VIOLET STERILIZER POWER CORD FROM THE SURGE SUPPRESSOR.
 - CLOSE BALL VALVES #9 AND #12.
 - PLACE SMALL BUCKET BELOW HOSE BIBB #10.
 - OPEN HOSE BIBB #10 TO DRAIN WATER FROM ULTRA VIOLET STERILIZER INTO BUCKET.
 - OPEN HOSE BIBB#11 TO ALLOW AIR INTO THE ULTRA VIOLET STERILIZER TO PREVENT AIR LOCKING SO ALL OF THE WATER WILL DRAIN FROM THE ULTRA VIOLET STERILIZER.
 - FOLLOW SERVICE AND CLEANING INSTRUCTIONS ON PAGES 8, 9, 10 AND 11 OF THE STERILIGHT COBALT MANUFACTURER'S MANUAL. (NOTE: THE MANUAL SAYS TO USE CLR OR LIME-A-WAY TO CLEAN THE QUARTZ SLEEVE AND THE SENSOR EYE. OUR EXPERIENCE INDICATES THAT ISOPROPYL ALCOHOL AND SHOP TOWELS CAN BE USED TO CLEAN THE QUARTZ SLEEVE AND ISOPROPYL ALCOHOL AND COTTON SWABS CAN BE USED TO CLEAN THE SENSOR EYE).
- AFTER THE QUARTZ SLEEVE AND SENSOR EYE HAVE BEEN CLEANED AND A NEW LAMP HAS BEEN INSTALLED (IF REQUIRED) THE ULTRA VIOLET STERILIZER SHOULD BE SANITIZED AND PUT BACK INTO OPERATION AS FOLLOWS:
 - SERVICE THE PENTEK SUMP FILTER AS DESCRIBED PREVIOUSLY IN THESE INSTRUCTIONS BUT ADD 1 CUP OF HOUSEHOLD BLEACH TO THE FILTER SUMP INSTEAD OF THE USUAL TWO TABLESPOONS.
 - SLOWLY OPEN VALVE 6A TO "PRESSURE UP" THE SUMP FILTER.
 - "DO NOT OPEN VALVE 7 THIS TIME BECAUSE WE WANT TO SEND THE BLEACH SOLUTION TO THE ULTRA VIOLET STERILIZER TO SANITIZE IT".
 - SLOWLY OPEN VALVE 7A TO ALLOW BLEACH SOLUTION TO FLOW TO VALVE 9.

- "POWER UP" THE ULTRA VIOLET STERILZER AS FOLLOWS:
 - IF YOU CLEANED THE QUARTZ SLEEVE AND SENSOR EYE BUT DID NOT DO AN ANNUAL LAMP REPLACEMENT JUST PLUG THE ULTRA VIOLET STERILIZER POWER CORD INTO THE SURGE SUPPRESSOR.
 - IF YOU CLEANED THE QUARTZ SLEEVE AND SENSOR AND REPLACED THE LAMP FOLLOW THE "RESETTING LAMP LIFE" INSTRUCTIONS ON PAGE 11 OF THE MANUFACTURER'S STERILIGHT COBALT MANUAL AND PLUG THE ULTRA VIOLET STERILIZER POWER CORD INTO THE SURGE SUPPRESSOR.
- CLOSE HOSE BIBB #10.
- CLOSE HOSE BIBB #11.
- SLOWLY OPEN BALL VALVE #9 ALLOWING THE BLEACH SOLUTION TO FLOW INTO THE ULTRA VIOLET STERILIZER. THE BLEACH SOLUTION WILL CAUSE THE WATER TO BECOME CLOUDY. THIS COULD CAUSE THE ULTRA VIOLET STERILIZER TO GO INTO ALARM MODE, CLOSE THE SOLENOID VALVE ON THE INLET SIDE OF THE ULTRA VIOLET STERILIZER AND DISPLAY THE "A2" CODE. IF THIS HAPPENS PUSH THE RESET BUTTON ON THE SIDE OF THE CONTROL BOX TO MANUALLY OPEN THE SOLENOID VALVE TO ALLOW THE BLEACH SOLUTION TO FILL THE ULTRA VIOLET STERILIZER.
- HOLD A 20-LITER BUCKET UNDER VALVE 11. SLOWLY OPEN VALVE 11 TO PURGE THE AIR FROM THE ULTRA VIOLET STERILIZER. "BE VERY CAREFUL NOT TO ALLOW THE STRONG BLEACH SOLUTION TO SPLASH ONTO YOUR BODY, ESPECIALLY INTO YOUR EYES". CLOSE VALVE 11 WHEN YOU HAVE PURGED THE AIR FROM THE ULTRA VIOLET STERILIZER.
- LEAVE THE SYSTEM IN THIS STATE FOR 20 MINUTES TO ALLOW THE BLEACH SOLUTION "TO WORK".
- AFTER 20 MINUTES HAVE PASSED PLACE A 20-LITER BUCKET UNDER VALVE 11. SLOWLY OPEN VALVE 11 AND FLUSH 20 LITERS OF WATER INTO THE BUCKET TO FLUSH THE BLEACH SOLUTION FROM THE SYSTEM. "BE VERY CAREFUL NOT TO SPLASH THE BLEACH SOLUTION ONTO YOUR BODY ESPECIALLY INTO YOUR EYES".
- CLOSE VALVE 11 AFTER FLUSHING 20 LITERS OF BLEACH SOLUTION.
- DISPOSE OF THE BUCKET OF BLEACH SOLUTION BY POURING IT INTO THE FLOOR SUMP IN THE NORTHEAST CORNER OF THE BUILDING.
- SLOWLY OPEN BALL VALVE #12 TO PUT THE WATER SYSTEM TO THE OFFICE BUILDING AND TO THE TWO HOUSES BACK INTO OPERATION.
- RECORD THE SERVICE DATE IN THE ULTRA VIOLET STERILIZER MAINTENANCE LOG.

REVERSE OSMOSIS SYSTEM:

PRE SEDIMENT AND CARBON FILTERS:

- REPLACE THESE FILTERS MONTHLY OR SOONER IF REQUIRED. YOU CAN CONFIRM THAT
 THEY SHOULD BE REPLACED SOONER BY TESTING AS FOLLOWS:
 - THERE'S A PRESSURE GAUGE ON THE INLET SIDE OF THE SEDIMENT FILTER AND ON THE OUTLET SIDE OF THE CARBON FILTER ON THE WATER SUPPLY LINE TO THE REVERSE OSMOSIS SYSTEM.
 - TEST THE PRESSURE DIFFERENTIAL ACROSS THE 5-MICRON SEDIMENT FILTER AND THE CARBON FILTER BY OBSERVING THESE TWO PRESSURE GAUGES AT LEAST ONCE A WEEK. THIS MUST BE DONE WHEN THE REVERSE OSMOSIS SYSTEM IS OPERATING BECAUSE WATER "MUST" BE FLOWING THROUGH THE FILTERS TO DO THIS TEST.
 - CHANGE BOTH FILTERS IF THE PRESSURE DIFFERENTIAL IS 7 PSI OR MORE ACROSS THE TWO FILTERS.
- REPLACE THE FILTERS AS FOLLOWS:
 - UNPLUG THE POWER CORD ON THE REVERSE OSMOSIS SYSTEM.
 - CLOSE BALL VALVE #14.
 - PLACE A 20-LITER BUCKET ON THE FLOOR BELOW THE SEDIMENT AND CARBON FILTER SUMPS TO CATCH SPILLED WATER.
 - USE THE WHITE FILTER WRENCH (HANGING ON THE STAND BELOW THE FILTERS) TO LOOSEN THE FILTER SUMPS. PUT THE WRENCH ON THE FILTER WITH THE HANDLE POINTING TO THE RIGHT SIDE OF THE SUMPS AND PULL THE HANDLE TOWARDS YOURSELF. PULL FIRMLY; DON'T JERK ON THE HANDLE! WHILE PULLING ON THE HANDLE WITH YOUR RIGHT HAND, HOLD AGAINST THE SUMP WITH YOUR LEFT HAND TO STEADY THE FILTER ASSEMBLY.
 - AFTER THE SUMPS ARE LOOSENED YOU CAN REMOVE THEM BY HAND WITHOUT THE USE OF THE WRENCH.
 - TIP THE SUMPS OVER POURING THE WATER AND THE OLD FILTERS INTO THE 20-LITER BUCKET.
 - RINSE THE SUMPS USING REVERSE OSMOSIS PRODUCT WATER FROM THE FIBERGLASS STORAGE TANK BY OPENING BALL VALVE #18 TO ADD WATER TO THE SUMPS. RINSE THE WATER AROUND IN THE SUMPS AND POUR THE RINSE WATER INTO THE 20-LITER BUCKET.
 - APPLY A "LIGHT" COATING OF SILICONE GREASE (SUPPLIED IN BROWN VIAL) ON THE SUMP O-RINGS.
 - TEAR THE PAPER WRAPPING OFF ONE END OF A NEW 5-MICRON SEDIMENT FILTER BEING CAREFUL NOT TO CONTAMINATE THE FILTER BY TOUCHING IT WITH YOUR HANDS.
 - INSERT THE 5 MICRON SEDIMENT FILTER INTO THE SUMP WHILE HOLDING THE OUTSIDE OF THE PAPER WRAPPING SO YOUR HAND DOES NOT TOUCH AND CONTAMINATE THE FILTER. REMOVE THE PAPER WRAPPING FROM THE FILTER.
 - TEAR THE PLASTIC WRAPPING OFF ONE END OF A NEW CARBON FILTER BEING CAREFUL NOT TO CONTAMINATE THE FILTER BY TOUCHING IT WITH YOUR HANDS.
 - INSERT THE CARBON FILTER INTO THE SUMP WHILE HOLDING THE OUTSIDE OF THE PLASTIC WRAPPING SO YOUR HAND DOES NOT TOUCH AND CONTAMINATE THE FILTER. REMOVE THE PLASTIC WRAPPING FROM THE FILTER.
 - INSTALL THE SUMPS BY HAND AND "JUST MAKE THEM SNUG". DO NOT USE A WRENCH TO TIGHTEN THE SUMPS OR IT WILL BE NEARLY IMPOSSIBLE TO REMOVE THEM THE NEXT TIME THE FILTERS HAVE TO BE CHANGED.
 - OPEN BALL VALVE #14 AND CHECK FOR LEAKS ON THE FILTERS.
 - PLUG IN THE REVERSE OSMOSIS SYSTEM POWER CORD.
 - RECORD THE DATE OF THE FILTER CHANGE IN THE RO MAINTENANCE LOG.

POST CARBON FILTER:

- THE ACTIVATED CARBON FILTER LOCATED BETWEEN BALL VALVE #18 AND BALL VALVE #19 REMOVES VOLATILE ORGANIC COMPOUNDS FROM THE WATER. WHEN THE REVERSE OSMOSIS PRODUCT WATER SHOWS THE FIRST SIGN OF OBJECTIONABLE TASTE THE CARBON FILTER IS NEARLY EXPENDED AND SHOULD BE REPLACED. IT SHOULD BE CHANGED AT LEAST ONCE A MONTH AS FOLLOWS:
 - CLOSE BALL VALVE #19.
 - PLACE A 20-LITER BUCKET UNDER THE BOTTLE FILL HOSE.
 - OPEN BALL VALVE #18 TO RELIEVE PRESSURE ON THE FILTER.
 - USE THE BLUE FILTER WRENCH (HANGING ON THE STAND BELOW THE FILTER) TO LOOSEN THE SUMP. PUT THE WRENCH ON THE FILTER WITH THE HANDLE POINTING TO THE RIGHT SIDE OF THE SUMP AND PULL THE HANDLE TOWARDS YOURSELF. PULL FIRMLY; DON'T JERK ON THE HANDLE! WHILE PULLING ON THE HANDLE WITH YOUR RIGHT HAND, HOLD AGAINST THE SUMP WITH YOUR LEFT HAND TO STEADY THE FILTER ASSEMBLY.
 - AFTER THE SUMP IS LOOSENED YOU CAN REMOVE IT BY HAND WITHOUT THE USE OF THE WRENCH.
 - TIP THE SUMP OVER POURING THE WATER AND THE OLD FILTER INTO THE 20-LITER BUCKET.
 - RINSE THE SUMP USING REVERSE OSMOSIS PRODUCT WATER FROM THE FIBERGLASS STORAGE TANK BY OPENING BALL VALVE #21 TO ADD WATER TO THE SUMP. RINSE THE WATER AROUND IN THE SUMP AND POUR THE RINSE WATER INTO THE 20-LITER BUCKET.
 - APPLY "LIGHT" COATING OF SILICONE GREASE (SUPPLIED IN BROWN VIAL) ON THE SUMP O-RING.
 - TEAR THE PLASTIC WRAPPING OFF ONE END OF A NEW CARBON FILTER BEING CAREFUL NOT TO CONTAMINATE THE FILTER BY TOUCHING IT WITH YOUR HANDS.
 - INSERT THE CARBON FILTER INTO THE SUMP WHILE HOLDING THE OUTSIDE OF THE PLASTIC WRAPPING SO YOUR HAND DOES NOT TOUCH AND CONTAMINATE THE FILTER. REMOVE THE PLASTIC WRAPPING FROM THE FILTER.
 - INSTALL THE SUMP BY HAND AND "JUST MAKE IT SNUG". DO NOT USE A WRENCH TO TIGHTEN THE SUMP OR IT WILL BE NEARLY IMPOSSIBLE TO REMOVE IT THE NEXT TIME THE FILTER HAS TO BE CHANGED.
 - CLOSE VALVE #18.
 - OPEN VALVE #19.
 - CHECK FOR LEAKS ON THE FILTER.
 - RECORD THE DATE OF THE FILTER CHANGE IN THE RO SYSTEM MAINTENANCE LOG.

FLUSHING THE MEMBRANE:

- ORGANIC OR MINERAL SLUDGE TENDS TO BUILD UP ON THE SURFACE OF THE MEMBRANE THAT CAN REDUCE ITS PERFORMANCE.
- THE MEMBRANE SHOULD BE FAST FLUSHED ONCE A WEEK.
- FLUSH THE MEMBRANE BY SLOWLY OPENING MANUAL FLUSH VALVE #22 WHICH IS LOCATED ON THE BACKSIDE OF THE REVESE OSMOSIS SYSTEM.
- LET THE UNIT FAST FLUSH FOR 5 MINUTES AND THEN SLOWLY CLOSE THE MANUAL FLUSH VALVE #22.
- RECORD THE DATE OF THE FAST FLUSH IN THE RO SYSTEM MAINTENANCE LOG.

HUMIDIFIERS:

OFFICE BUILDING:

- THIS HUMIDIFIER IS SUPPLIED WITH WATER FROM THE REVERSE OSMOSIS SYSTEM.
- THE WATER FROM THE REVERSE OSMOSIS SYSTEM CONTAINS VERY LOW AMOUNTS OF TOTAL DISSOLVED SOLIDS, SO THE WATER TRAY, DRUM AND FLOAT IN THIS HUMIDIFIER WILL PROBABLY HAVE TO BE CLEANED ONLY ONCE AT THE BEGINNING OF EVERY HEATING SEASON AS FOLLOWS:
 - CLOSE THE WATER SUPPLY VALVE; IT IS A PLASTIC BALL VALVE IN THE WATER LINE ADJACENT TO THE HUMIDIFIER.
 - REMOVE THE FRONT COVER FROM THE HUMIDIFIER.
 - REMOVE THE PIN IN THE VALVE TO REMOVE THE VALVE FLOAT ASSEMBLY.
 - REMOVE THE DRUM ASSEMBLY.
 - REMOVE THE PAD FROM THE DRUM ASSEMBLY.
 - REMOVE THE WATER PAN.
 - CLEAN BUILD-UP OF SOLIDS FROM THE VALVE FLOAT, DRUM ASSEMBLY AND WATER TRAY.
 - INSTALL NEW PAD ON THE DRUM ASSEMBLY (IF REQUIRED).
 - INSTALL THE DRAIN TRAY.
 - INSTALL THE DRUM ASSEMBLY.
 - INSTALL THE VALVE FLOAT ASSEMBLY.
 - OPEN THE WATER SUPPLY VALVE.
 - ALLOW THE WATER PAN TO FILL AND CONFIRM THAT IT SHUTS OFF THE WATER SUPPLY WHEN THE WATER PAN IS FULL.
 - INSTALL THE FRONT COVER ON THE HUMIDIFIER.
- THE PAD SHOULD BE CHECKED AT THE BEGINNING OF EVERY SEASON BECAUSE IT EVENTUALLY WILL DETERIORATE AND WILL SIMPLY FALL APART.
- THE DAMPER ON THE DUCT SHOULD BE OPENED AT THE BEGINNING OF THE HEATING SEASON AND SHOULD BE CLOSED AT THE END OF THE HEATING SYSTEM.
- THE BALL VALVE ON THE WATER SUPPLY LINE SHOULD BE OPENED AT THE BEGINNING OF THE HEATING SEASON AND CLOSED AT THE END OF THE HEATING SEASON.
- RECORD THE DATE OF THE SERVICE IN THE HUMIDIFIERS MAINTENANCE LOG.

HOUSES:

- THESE HUMIDIFIERS ARE BEING SUPPLIED WITH WATER FROM THE BUILDING WATER DISTRIBUTION SYSTEM. THIS WATER HAS A VERY HIGH CONCENTRATION OF TOTAL DISSOLVED SOLIDS (3000 PPM) WHICH WILL BUILD UP VERY QUICKLY IN THE WATER TRAYS, DRUMS AND FLOATS IN THESE UNITS.
- THESE HUMIDIFERS SHOULD BE CLEANED AT LEAST ONCE A MONTH DURING THE HEATING SEASON AS FOLLOWS:
 - CLOSE THE SUPPLY VALVES (SADDLE VALVES ON THE COPPER WATER LINES).
 - REMOVE THE FRONT COVER FROM THE HUMIDIFIER.
 - REMOVE THE PIN IN THE VALVE TO REMOVE THE VALVE FLOAT ASSEMBLY.
 - REMOVE THE DRUM ASSEMBLY.
 - REMOVE THE PAD FROM THE DRUM ASSEMBLY.
 - REMOVE THE WATER PAN.
 - CLEAN BUILD-UP OF SOLIDS FROM THE VALVE FLOAT, DRUM ASSEMBLY AND WATER TRAY.
 - INSTALL NEW PAD ON THE DRUM ASSEMBLY.
 - INSTALL THE DRAIN TRAY.

HOUSES (CONTINUED):

- INSTALL THE DRUM ASSEMBLY.
- INSTALL THE VALVE FLOAT ASSEMBLY.
- OPEN THE WATER VALVE.
- ALLOW THE WATER PAN TO FILL AND CONFIRM THAT IT SHUTS OFF THE WATER SUPPLY WHEN THE WATER PAN IS FULL.
- INSTALL THE FRONT COVER ON THE HUMIDIFIER.
- THE DAMPER ON THE DUCT SHOULD BE OPENED AT THE BEGINNING OF THE HEATING SEASON AND SHOULD BE CLOSED AT THE END OF THE HEATING SEASON.
- THE BALL VALVE ON THE WATER SUPPLY LINE SHOULD BE OPENED AT THE BEGINNING OF THE HEATING SEASON AND CLOSED AT THE END OF THE HEATING SEASON.
- RECORD THE DATE OF THE SERVICE IN THE HUMIDIFIERS MAINTENANCE LOG.

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Stenger's Plum	ing & Heating Ltd., 19 Rossland Drive SE, Medicine	e Hat, Alberta,	
phone 403-	26-2251, fax 403-529-9316, e-mail: stengers@telus	planet.net	

ASFC - Divulgation en vertu de la loi sur l'Accès à

REVERSE OSMOSIS SYSTEM SERVICE PERSON TO ENTER DATE AND INITIAL MAINTENANCE WORK THAT WAS COMPLETED POST CARBON FILTER CARBON FILTERS CHANGED POST CARBON FILTER CHANGED FAST FLUSHING THE MEMBRANE CHANGED STENDER S		MAINTENANCE LOG							
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Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SE. Medicine Hat, Alberta.	DATE								
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	MAINTENANCE LOG	
PENTEK SUMP FILTE	ER LOCATED DOWNSTREAM OF THE	NOVO
	DUPLEX TANNINS REMOVAL WATER S	OFTENER
SERVICE PERSON	TO ENTER DATE & INITIAL MAINTENANCE	WORK THAT WAS COMPLETED
DATE	DIFFERENTIAL PRESSURE CHECKED	FILTER CHANGED

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	bing & Heating Ltd., 19 Rossland Drive SW, Me	
phone	e 403-526-2251, fax 403-529-9316, e-mail:stenge	rs@telusplanet.net

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MAINTENANCE LOG ULTRA VIOLET STERILIZER SERVICE PERSON TO ENTER DATE AND INITIAL MAINTENANCE WORK THAT WAS COMPLETED **REPLACE O-**REPLACE LAMP RING CLEAN QUARTZ **CLEAN SENSOR** RESET LAMP (EVERY 365 **(EVERY 365 SLEEVE (AS QUARTZ (AS COUNTER (WITH** LAMP CHANGE) DATE DAYS) DAYS) NEEDED) NEEDED)

Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SW, Medicine Hat, Alberta, T1B 2B5 phone 403-526-2251, fax 403-529-9316, e-mail:stengers@telusplanet.net

VALVE SCHEDULE

OPERATION & MAINTENANCE MANUAL CANADA CUSTOMS & REVENUE AGENCY, WILDHORSE BORDER CROSSING

VALVE		
NO.	BUILDING	VALVE TYPE, LOCATION, PURPOSE
1	OFFICE	BALL VALVE, EAST WALL, CONTROLS WATER SUPPLY TO SERVICE LINE TO BOTH HOUSES
2	OFFICE	HOSE BIBB, ABOVE PUMP CONTROLLER, TEST POINT TO TEST WELL WATER SAMPLE
		BALL VALVE, ABOVE PUMP CONTROLLER, CONTROLS WATER SUPPLY TO THE ENTIRE WATER
3	OFFICE	DISTRIBUTION SYSTEM SERVING OFFICE BUILDING AND BOTH HOUSES
4	OFFICE	HOSE BIBB, POST MULTI MEDIA FILTER, USED TO TEST WATER AFTER MULTI MEDIA FILTER
5	OFFICE	BALL VALVE, EAST WALL, CONTROLS WATER TO THE REAR LAWN SERVICE VALVE
6	OFFICE	HOSE BIBB, POST NOVO TANNINS REMOVAL WATER SOFTENER, USED TO TEST WATER AFTER THE TANNINS REMOVAL WATER SOFTENER
6A	OFFICE	BALL VALVE, INLET SIDE OF PENTEK SUMP FILTER, USED TO ISOLATE SUMP FILTER WHEN REPLACING THE SEDIMENT CARTRIDGE
7	OFFICE	HOSE BIBB, POST PENTEK SUMP FILTER, USED TO SERVICE THE WATER FILTER
		BALL VALVE, OUTLET SIDE OF PENTEK SUMP FILTER, USED TO ISOLATE SUMP FILTER WHEN REPLACING
7A	OFFICE	THE SEDIMENT CARTRIDGE
8	OFFICE	BALL VALVE, CENTER WALL, USED FOR EMERGENCY BYPASS ON THE ULTRA VIOLET STERILIZER
9	OFFICE	BALL VALVE, CENTER WALL, CONTROLS WATER SUPPLY TO THE ULTRA VIOLET STERILIZER
10	OFFICE	HOSE BIBB, CENTER WALL, USED TO DRAIN UV STERILIZER WHEN SERVICING THE UV STERILIZER
11	OFFICE	HOSE BIBB, CENTER WALL, USED AS A VENT & FOR PURGING WHEN SERVICING THE UV STERILIZER
12	OFFICE	BALL VALVE, CENTER WALL, USED TO ISOLATE UV STERILIZER ON EMERGENCY BYPASS
13	OFFICE	BALL VALVE, SOUTH WALL, USED TO CONTROL WATER SUPPLY TO OFFICE BLDG AND RO SYSTEM
14	OFFICE	BALL VALVE, SOUTH WALL, USED TO CONTROL WATER SUPPLY TO REVERSE OSMOSIS SYSTEM
15	OFFICE	BALL VALVE, ABOVE WATER HEATER, CONTROLS COLD WATER SUPPLY TO WATER HEATER
16	OFFICE	BALL VALVE, ABOVE WATER HEATER, CONTROLS COLD WATER SUPPLY TO MAIN FLOOR FIXTURES
17	OFFICE	BALL VALVE, ABOVE WATER HEATER, CONTROLS HOT WATER SUPPLY TO MAIN FLOOR FIXTURES
18	OFFICE	BALL VALVE, LEFT SIDE OF CARBON FILTER ON RO SYSTEM, USED TO FILL WATER BOTTLES
19	OFFICE	BALL VALVE, RIGHT SIDE OF CARBON FILTER ON RO SYSTEM, USED TO CHANGE FILTER CARTRIDGE
20	OFFICE	BALL VALVE, ON PRESS TANK ON RO SYSTEM, SOMETIMES USED TO FAST FLUSH RO MEMBRANE
21	OFFICE	BALL VALVE, ON PRESSURE TANK ON RO SYSTEM, USED TO DRAIN RO SYSTEM PRESSURE TANK

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22	OFFICE	BALL VALVE, ON BACK SIDE OF RO SYSTEM, USED TO FAST FLUSH MEMBRANE ON RO SYSTEM
23	OFFICE	SADDLE VALVE, EAST WALL, THIS VALVE IS NOT USED, IT WAS ORIGINALLY USED TO RUN WATER TO DRAIN THROUGH A 1/4" POLYETHYLENE TUBE AT THE RATE OF ONE DROP PER SECOND. THIS PREVENTED OVER HEATING OF THE WATER IN THE ORIGINAL OBSOLETE WEDECO ULTRA VIOLET STERILIZER WHEN WATER WAS NOT BEING USED FOR EXTENDED PERIODS OF TIME (E.G. OVER NIGHT). THE ORIGINAL WEDECO ULTRA VIOLET STEIRLIZER WOULD GO INTO A FALSE ALARM MODE WHEN THE WATER INSIDE IT WAS TOO WARM.
24	EAST HOUSE	BALL VALVE, CEILING AT BOTTOM OF BASEMENT STAIRS, CONTROLS WATER SUPPLY TO THE EAST HOUSE
25	EAST HOUSE	GATE VALVE, NORTH WEST CORNER OF THE BASEMENT, 12" ABOVE THE BASEMENT FLOOR, ON THE RIGHT SIDE OF THE OLD PUMP ROOM DOOR, CONTROLS WATER SUPPLY TO THE UNDERGROUND WATER SERVICE LINE TO THE WEST HOUSE
26		GATE VALVE, NORTH EAST CORNER OF BASEMENT, CONTROLS WATER SUPPLY TO THE WEST HOUSE
Stenge	r's Plumbing (& Heating Ltd, 19 Rossland Drive SE, Medicine Hat, Alberta, T!A 2B5, Phone: 403-
		526-2251, Fax: 403-529-9316, E-mail: stengers@telusplanet.net

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MAINTENANCE LOG

GROUNDWATER WELL AND SUPPLY SYSTEM

DATE	WELL CAP SECURED AND	WELL CASING SEALED (NO JOINTS OR CRACKS)	PUMP OPERATING	FLOW RATE / QUANTITY	STATIC WATER LEVEL	OPERATING WATER LEVEL	OTHER SERVICE / COMMENTS
	WATERTIGHT	OR CRACKS)		QUANTITY	LEVEL	LEVEL	COMMENTS
	-						









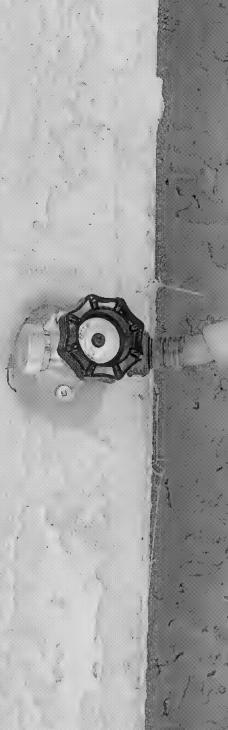








CAUTION:
NON-POTABLE
WATER AT THIS
HOSE BIBB.























































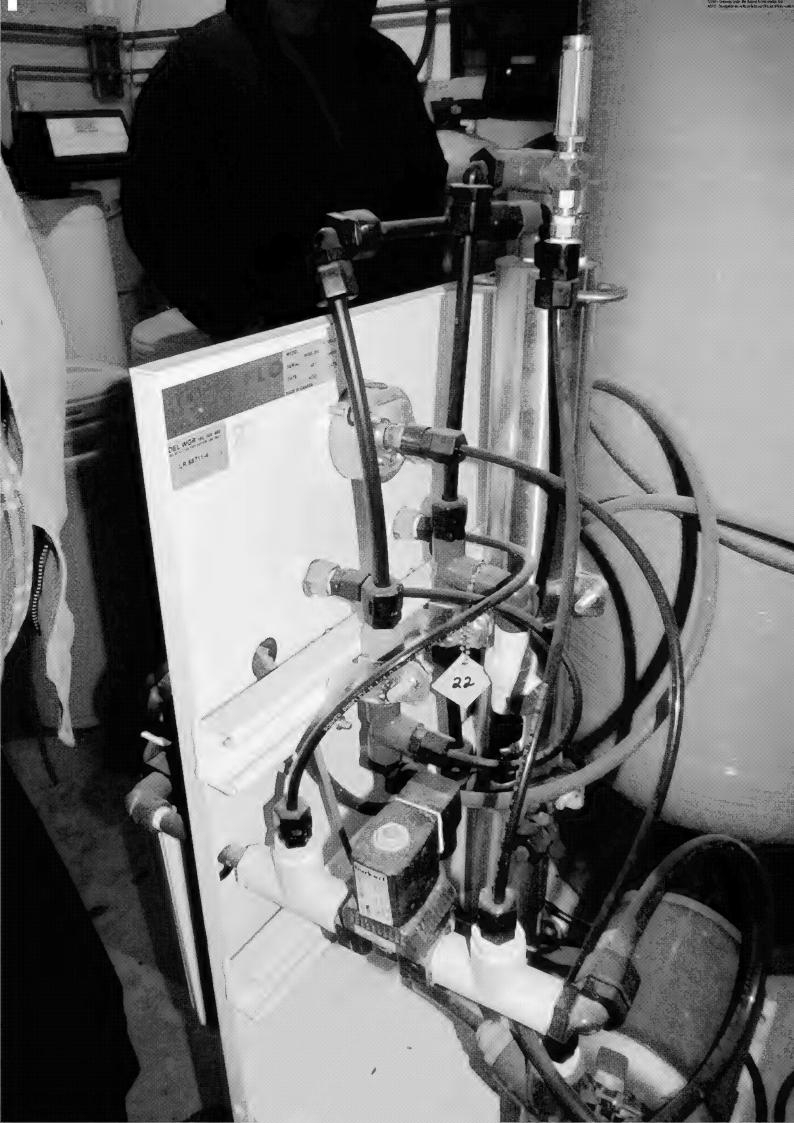






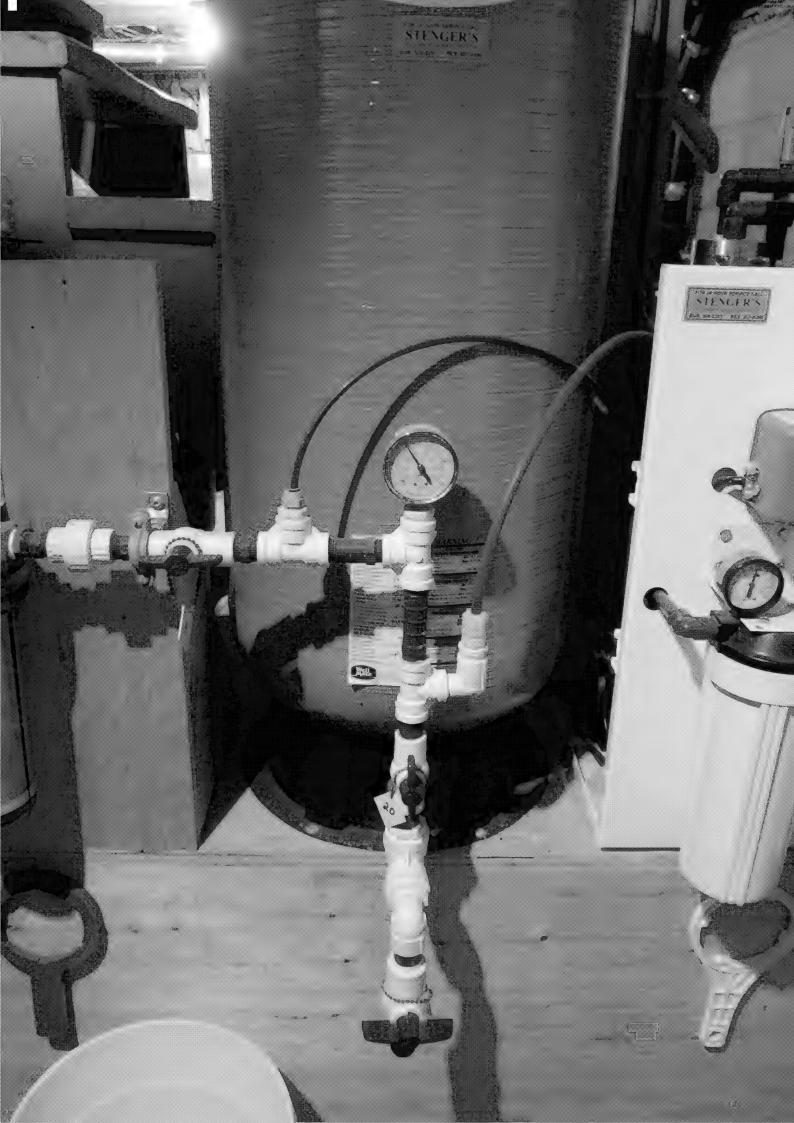












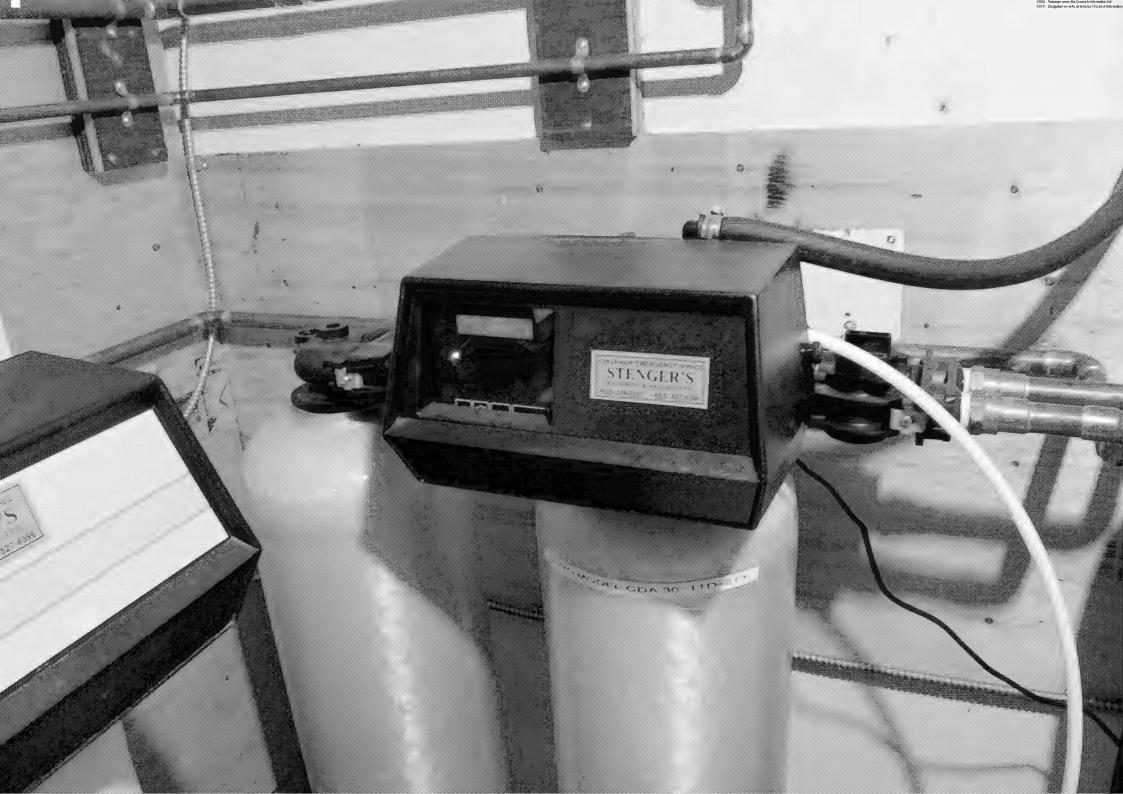


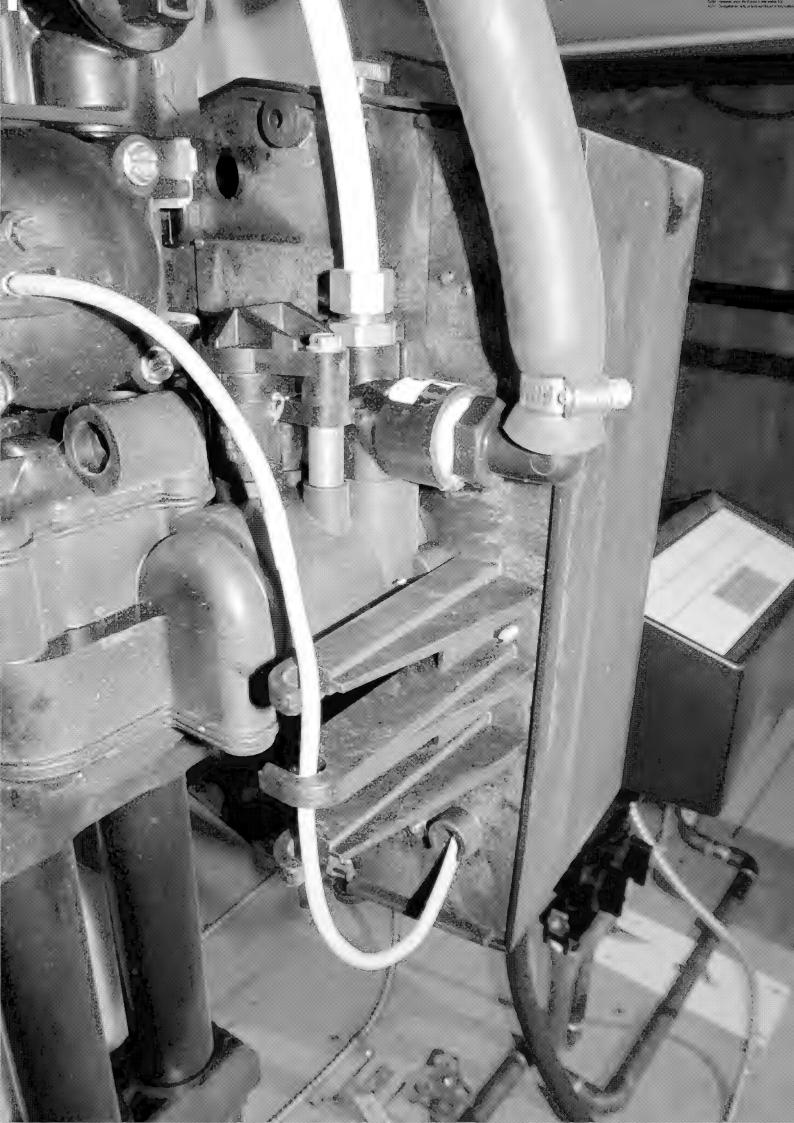




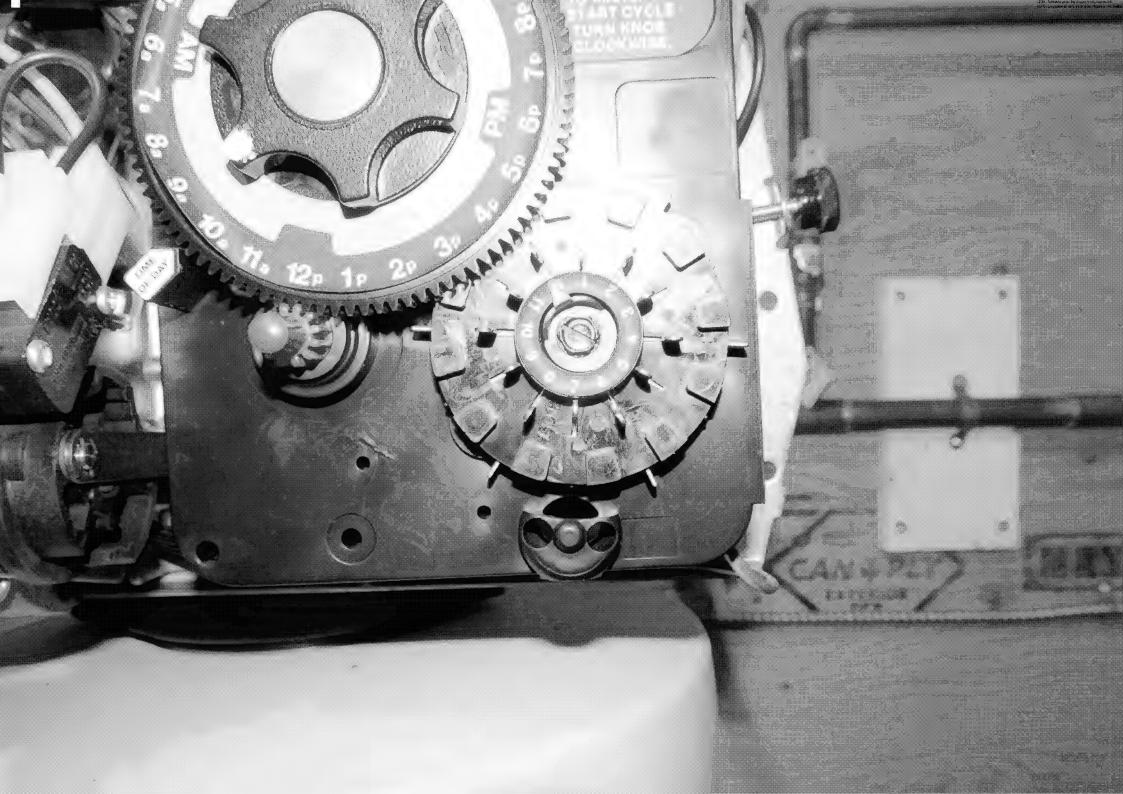








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COD 20-75TD-2TS-850 RESIN



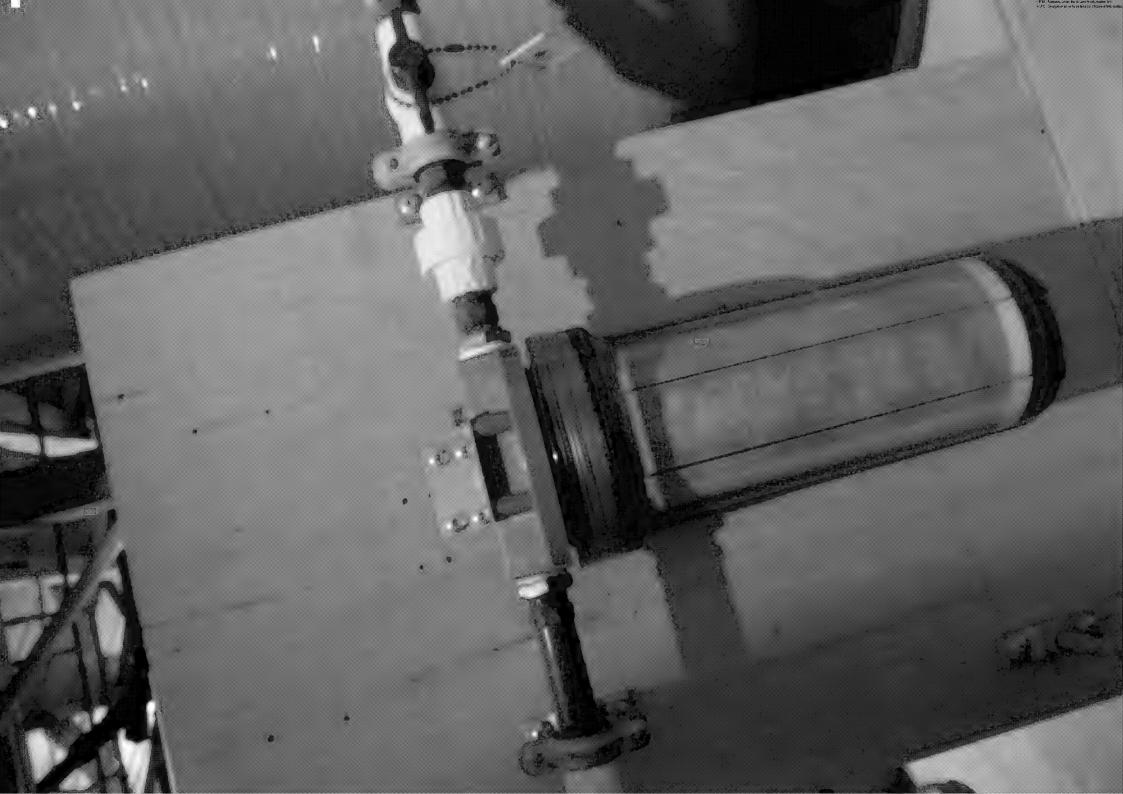






















Electronic ICE Controller / Contrôleur Électronique ICE

ROHS

press switch to scroll display screen press & hold to silence low UV alarm for 12 hours press & hold to silence end of lamp life (EOL) alarm for 7 days (4 times max.) press & hold on start-up to reset lamp life timer



niveau d'intensité UV (%)

lamp life remaining (days) / durée de vie de la lampe qui reste (jours)

total operating (days) / temps écoulé (jours)

Alarms / Alarmes:

A2 - low UV / alarme indiquant une faible intensité UV

A3 - EOL / FVL

Blank Screen / Aucun affichage - lamp/ballast failure / défiance lampe/ballast

COL -11

www.vigua.com

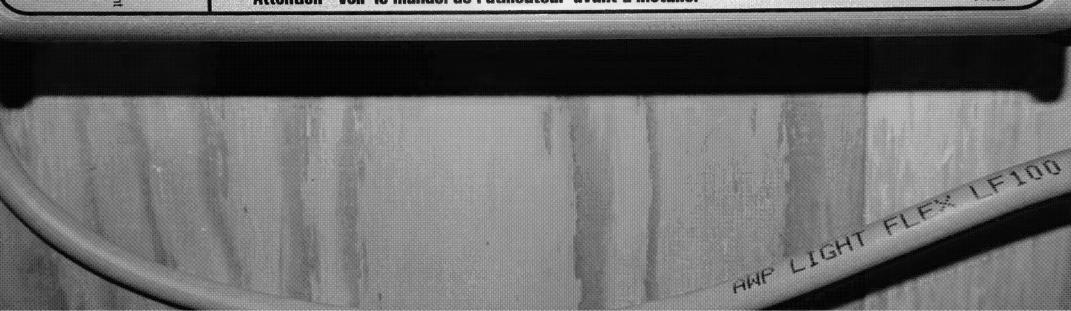
Input Voltage 100-240V~ 50/60Hz / Tension d'alimentation 100-240 V~ 50/60 Hz

1.5A max. operating S740RL-HO (80W) lamp at 100V / 1,5 A max. pour une lampe de 100 V, S740RL-HO (80 W)

For Indoor Use Only / Pour utilisaton à l'intérieur seulement Disconnect Power Before Servicing / Débrancher l'alimentation électrique avant d'exécuter les travaux.

Danger - High voltage electrical shock hazard DO NOT OPEN / Tension électique élevée risque de choc électrique NE PAS OUVRIR Caution - See owner's manual before installation / Attention - Voir le manuel de l'utilisateur avant d'installer

























AQUA FLO

DRINKING WATER SYSTEM

Made in Canada

SYSTEMES DI AU POTATT

MODEL WGR 160, 300, 450 120 VAC 60 Hz 7.0A FOR INDOOR USE ONLY



LR 68711-4

INSPECTED

WGR-300

1457

AG02 ABA

MODELE



MODEL SERIAL DATE E





Bill in required information and affix to control box of any 1935 St. St. St. St. St.

Nodel Date Installed (Assult (
FH HZ /	Therm. Protected



MODEL 2801054915

VOLTS 230





























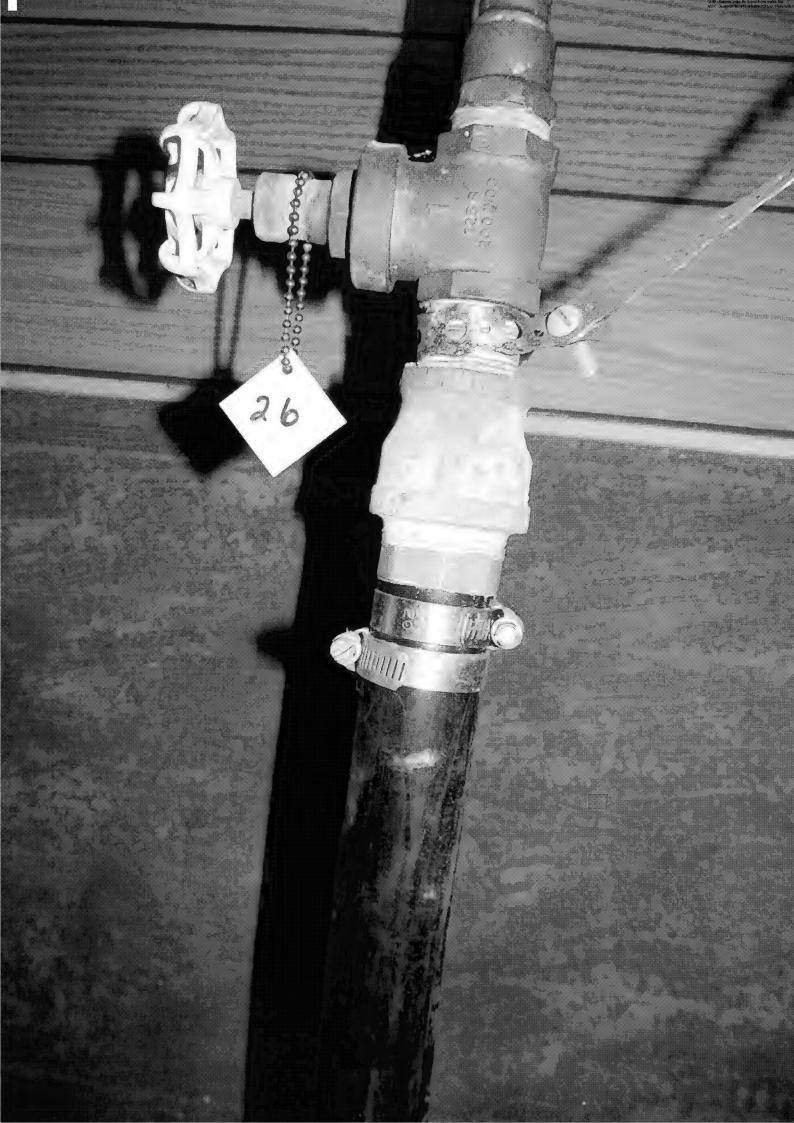


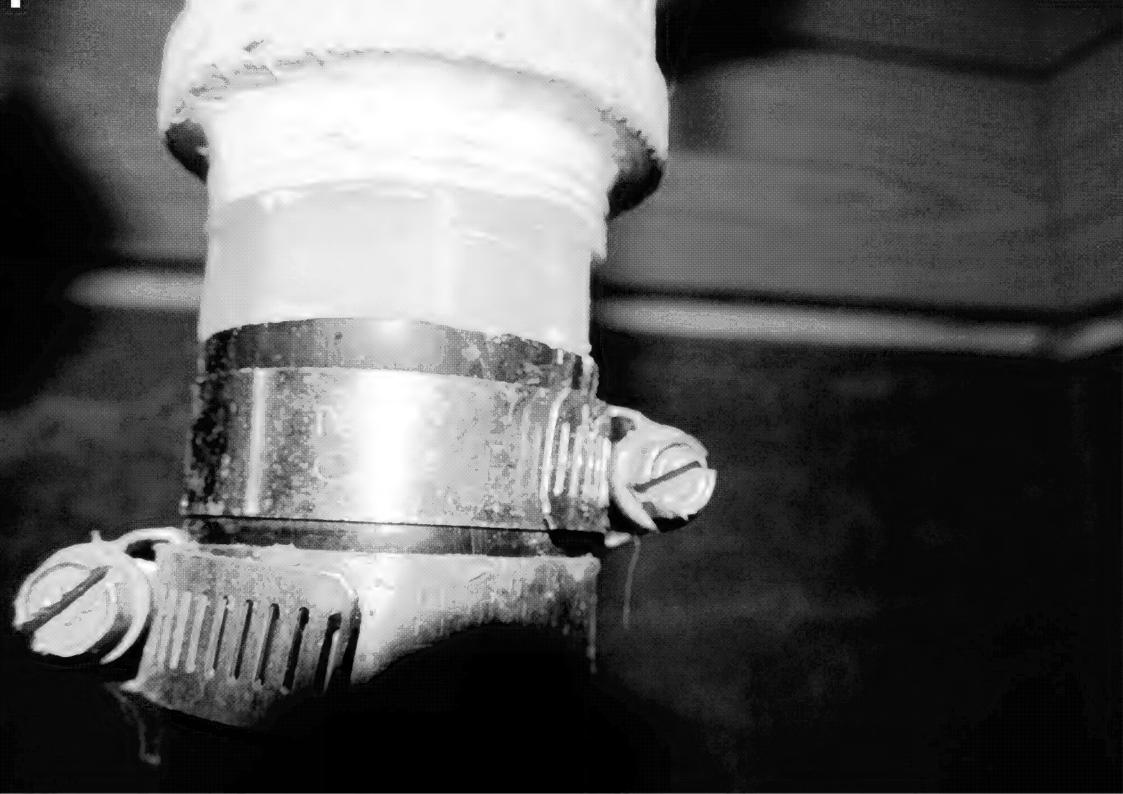














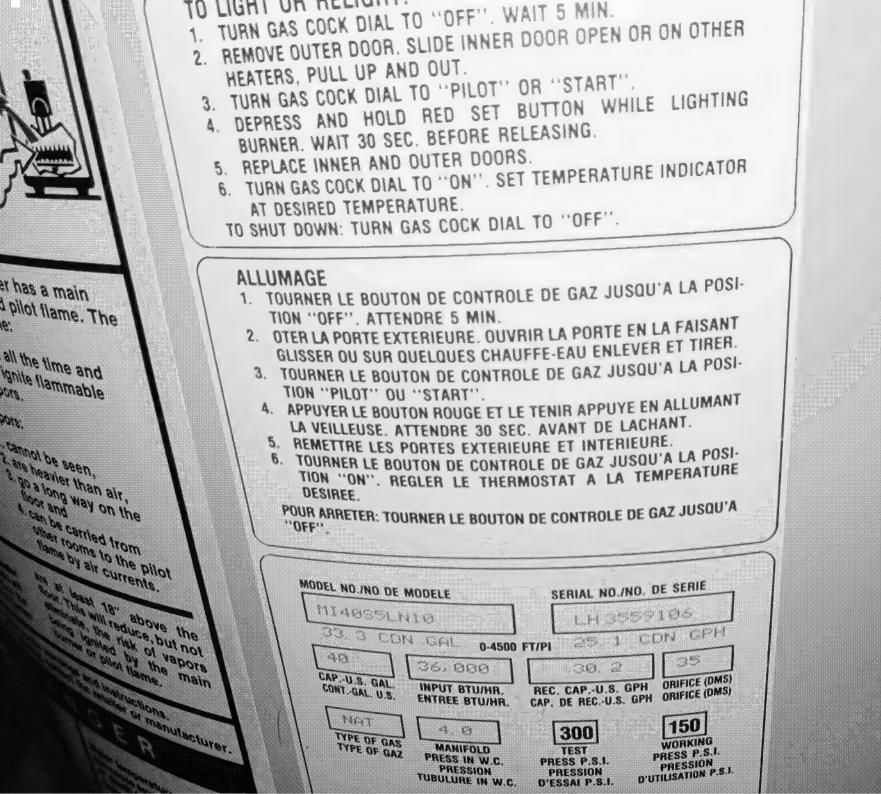










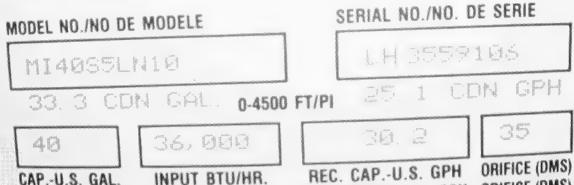


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TOURNER LE BOUTON DE CONTROLE DE GAZ JUSQU'A LA POSI-

TION "ON". REGLER LE THERMOSTAT A LA TEMPERATURE DESIREE. POUR ARRETER: TOURNER LE BOUTON DE CONTROLE DE GAZ JUSQU'A

"OFF".



CAP.-U.S. GAL. INPUT BTU/HR. ENTREE BTU/HA. CONT.-GAL. U.S.

 A_{*} O

MANIFOLD

PRESS IN W.C.

PRESSION

TUBULURE IN W.C.

TYPE OF GAS

TYPE OF GAZ

CAP. DE REC.-U.S. GPH ORIFICE (DMS) 300

PRESS P.S.I. PRESSION D'ESSALP.S.I. 150

WORKING PRESS P.S.I. PRESSION D'UTILISATION P.S.I.

(F) APPROVID

BRADFORD-WHITE CORPORATION SPRING HOUSE CORPORATE CENTER 323 NORRISTOWN RD. AMBLER, PA. 19002-2758





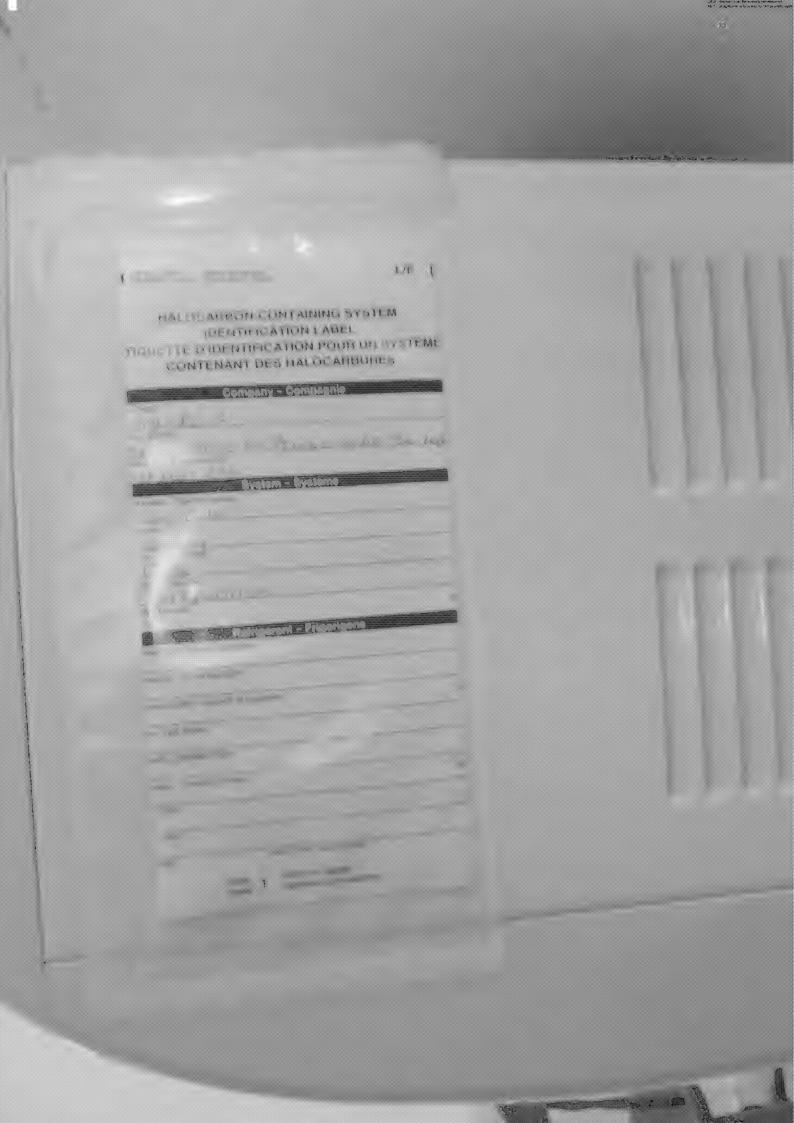






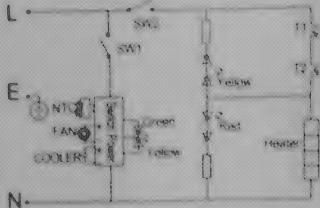






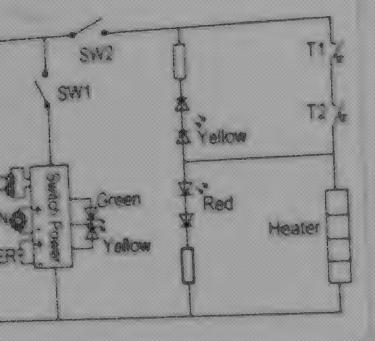


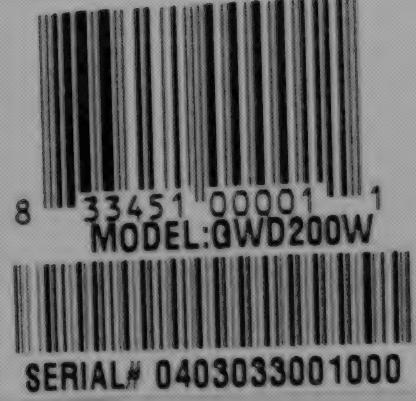
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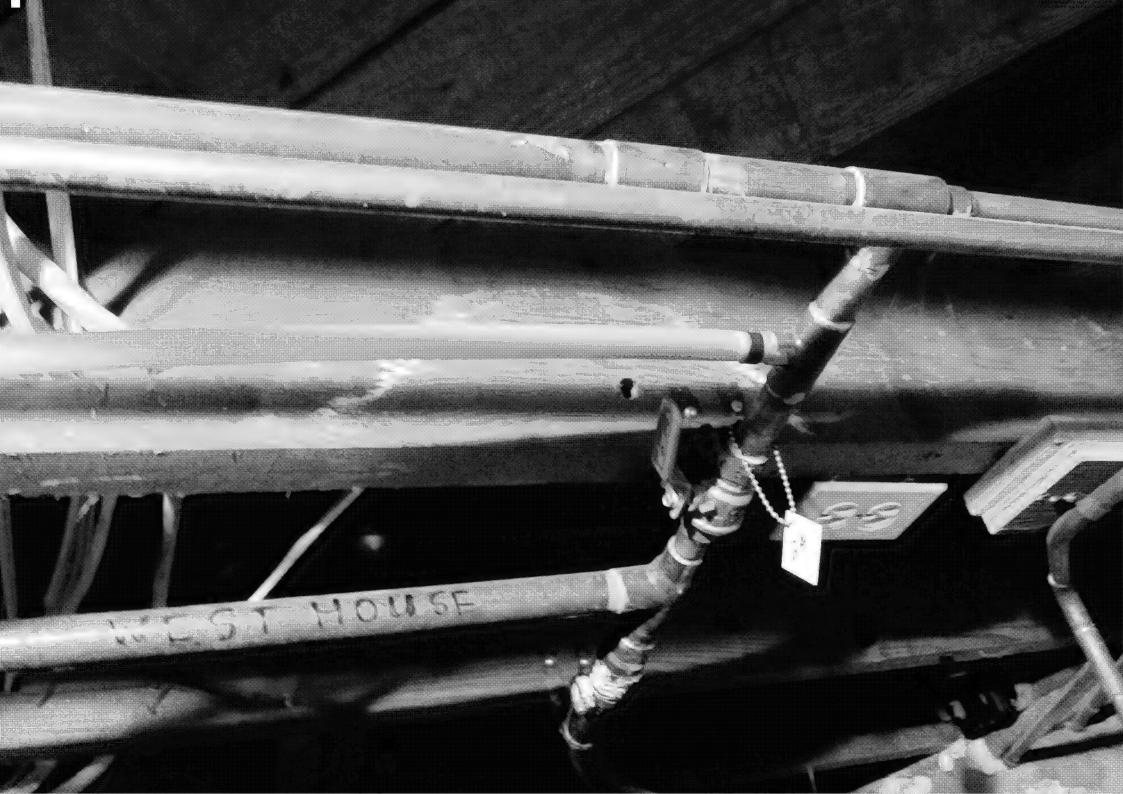


























IT A GAS CONTROLS nd hold down red pilot set button. ely light the pilot with a match. e to hold down the button for about one ute after the pilot is lit. Release button should pop back up. Pilot should remain it goes out, repeat steps 5 through 9.

REXHIBIT B GAS CONTROLS press and hold down gas control knob. nmediately light the pilot with a match. Continue to hold down the knob for about one (1) minute after the pilot is lit. Release the knob and it should pop back up. Pilot should remain lit. If it goes out, repeat steps 5 through 9.

FOR EXHIBIT A & B GAS CONTROLS -If button or knob does not pop up when released, stop and immediately call your

service technician or gas supplier.

If the pilot will not stay lit after several tries, turn the gas control knob to "OFF" and call your technician or gas supplier.

10. Replace inner door or slide it closed.

11. Turn gas control knob counterclockwise to "ON" position.

12. Set thermostat to desired setting.

13. If applicable, turn on all electric power to the appliance.

IURN OFF GAS TO APPLIANCE

3. Rotate and, if applicable, partially depress gas control knob clockwise \tag{ to "OFF" position. The State of

Do not store or use yassam vapors or liquids in the vicinity of this of any WARNING

HOT WATER CAN PRODUCE 3RD DEGREE BURNS IN 6 SECONDS AT 140°F (80°C)

Is will explode and catch fire causing death or IN 30 SECONDS AT 13 (4°C)

Read and follow water heater warnings and instructions. If installation and Vapors from flammats severe burns.

operating instructions are missing, contact the retailer or manufacturer. This appliance must be installed in accordance with local codes or, in the

absence of local codes, the National Fuel Gas Code, ANSI Z223.1. Not for installation in a Manufactured Home (Mobile Home).

CAUTION: Operation of this water heater in air contaminated by perchloroethylene,

any chlorinated hydrocarbon or strong oxidizing agents, will result in serious damage to brass orifices, internal steel parts and void the warranty. IMPORTANT - BURNER MUST BE LEVEL. Models containing a cast iron

burner are equipped with an adjustable air shutter. The air shutter on the tront of the main burner must be adjusted when the water heater is installed.

See installation institutions for the main burner must be adjusted when the water heater is installed. See installation instuctions for proper air shutter adjustment procedures.

WARNING: This water heater must be braced, anchored or strapped to avoid falling or moving during an analysis of the stranger of the stranger

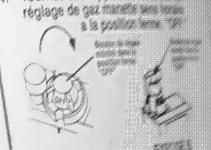
or moving during an earthquake. See instructions for correct installation procedures.

WARNING: If not installed contrated and maintained in accordance with the WARNING: If not installed, operated and maintained in accordance with the manufacturer's installed. manufacturer's instructions this product could expose you to substances in the fuel or from fuel combustion which are cause death or serious illness the fuel or from fuel combustion which can cause death or serious illness including cancer high defeate a serious and serious including cancer high defeate a serious cancer high defeate a se

including cancer, birth defects or other reproductive harm. SUITABLE FOR WATER (POTABLE) HEATING AND SPACE HEATING chemicals such as used for hollow treatment shall not be introduced.

Toxic chemicals, such as used for boiler treatment, shall not be introduced into potable water heater used for enace heating. This water heater may not be introduced. into potable water heater used for space heating. This water heater may never be connected to any existing heating system or component(s) previously used be connected to any existing heating system or component(s) previously with a nonpotable water heating appliance

with a nonpotable water heating appliance.



SPOSE

NOTE: Sur les réglages d'expusit s bouton de réglage té per par un per production de réglage té per par un per la mont que e sur production de la company de la com abaisse un peu les a tours pa

Attendez sing (5) minuted sere to a Ensuite, sentez pour a par mou ma a SOI. SI VOUS SENTEL & THE APPLE "B" dans l'information in storm i per de cette étrojette 5 vous le seminir gaz, continuez avec a pas promo Enleyer to porte exercise Engels and

intérieure ou le glisses que s Trouvez la reilleuse Soirce e son

d'aluminium ou dessous droit du contraé de gaz La veilleuse es

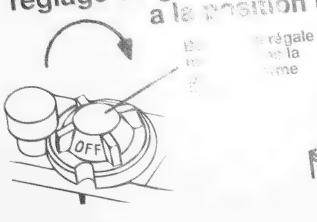
Tournez le bouto de reseau de 9az à la parence ve le parence ve le parence ve le parence ve le parence de 9az à la parence de 9az à la parence de 19az à la

POUR COUPERL SOCATO 5 1 Seed Free Book 8 St. Couper almen

Region to thousand to be proper Operations particular

Réglez le thermostat à la température la plus 3. basse.

Tournez et si applicable le bouton de réglage de gaz manette sens horaire Δ., a la prosition ferme, "OFF."



Bouton de régale montré dans la position ferme "OFF"

EXPOSÉ A

EXPOSÉ B

NOTE: Sur les réglages d'exposé B, le bouton de réglage ne peut pas tourner de "PILOT" à "OFF" à moins que le bouton abaisse un peu. Ne le fourrez pas.

Attendez cinq (5) minutes áerer de gaz. Ensuite, sentez pour le gaz, inclus près du sol. Si vous sentez le gaz, ARRÊTEZ! Suivez "B" dans l'information de sécurité à gauche de cette étiquette. Si vous ne sentez pas le 5. gaz, continuez avec le pas prochain. Enlevez la porte extérieure. Enlevez la porte

intérieure ou la glissez ouverte. Trouvez la veilleuse. Suivez le tube 6.

d'aluminium du dessous

thermocouple

allumez la veilleuse avecui Continuez à maintenir en g pendant une (1) minute au allumé. Láchez le bouton place. La veilleuse rentali éteint, répétez les pas 5 à

9b. LES CONTRÔLES DE GAZ EXPOSEB

Appuyez sur et maintenez de contrôle de gaz. Imme la veilleuse avec une allu maintenir en place le boil minute après la veilleuse bouton et il retournait en restait allumer. Si elle elle 5 à 9.

POUR LES RÉGLAGES ET D'EXPOSE B

- · Si la manette ne se so même lorsqu'on la re appeler immediateme qualifié ou le fourniss · Si la veilleuse ne res
- plusieurs tentatives d'admission du gaz "OFF" et appeler un le fournisseur de 94 10. Remplacez la porte
- fermé. Remplacez la 11. Tournez le bouton d
- antihoraire 12. Régler le thermasta

id falling

talled.

ne

res.

ylene,

ADANGER

Water temperature over 125°F cause severe burns natantly or death from scalds. Children, disabled and elderly are at highest risk of being

See instruction manual before seeing temperature at water

Feel water before bathing or

Samperature limiting valves are traighie, see manual.

AUTOMATIC STORAGE WATER HEATER

BRADFORD WHITE CORPORATION
200 LAFAVETTE ST. MIDDLEVILLE MI 49333 Model No: MI403SEENH12 Serial No: X03579731 Dash No: -220 40.07 33.31U.S.7Can. Sal.)Rec. 30(SPk) 0 - 4,500 ft (0 - 1,370 m) Gas: NATURAL 36,000(Btu/hr.) Drifice: 33 Manifold: 4.0(''u.c.) 1.00(kPa) Inlet Supply: Max. 14.0(' U. c.) 3.4(kPa); 5.0(''u.c.) 1.2(kPa), For closet installation. MINIMUM CLEARANCES FROM COMBUSTIBLE CONSTRUCTION: O IN. BACK, 12 IN. TOP. O IN SIDES, MINIMUM CLEARANCE FROM DRAFT HOOD (OR WENT)



TO COMBUSTIBLE CONSTRUCTION, 6 INCHES.

Press: Test 300(Psi), Working 150(Psi)



A Vapors from flammable liquids will explode and catch fire causing death or severe burns.

Do not use or store flammable products such as gasoline, solveni or adhesives in the same room or area near the water heater.

Keep flammable products: 1. far away from heater,

2. in approved containers.

3. tightly closed and 4. out of children's reach.

of install water h Installation:

AVIS PUBLIC / PUBLIC NOTICE

NE PAS BOIRE - EAU NON-POTABLE

DO NOT DRINK - WATER IS NOT POTABLE

Name (PRINT and SIGN Follow) News (MER MER or SIGNER) Services

Water is not potable - potable - Ne pas consumption consommer

































		TOTA	TS			
HZ	TOTAL	LRA L/HR	MIN.CIR.MA	AX. FUSE ZE 1 PH		
RIA	PSI L NO	6540				
	N	N PSI	HZ TOTAL LRA L/HR	PSI RIAL NO.	TOTAL WATTS HZ TOTAL LRA L/HR MIN.CIR. MAX. FUSE AMPS SIZE I PH PSI RIAL NO.	TOTAL WATTS HZ TOTAL LRA L/HR MIN.CIR. MAX. FUSE AMPS SIZE I PH N 28 PSI RIAL NO.

























Pentek® Accessories



Cartridge Couplers

155003 Standard coupler available for standard double open end (DOE) cartridges Material: polypropylene



Sump Extension

157209 Used for all natural polypropylene housings Material: polypropylene



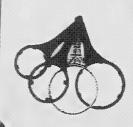
Big Blue" Coupler

144229 Available for Big Blue*
(4-1/2" diameter) DOE
cartridges
Material: Polypropylene



Cap Plug Kit

144457 For vents or gauges Includes plug and O-ring



Spanner Wrenches

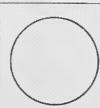
Used to loosen sump when changing cartridges.

150539 Wrench, Sump, SW-1A, Slim Line & 3G Housings 150295 Wrench, Sump, SW-2, Standard 3/4" Housings 150296 Wrench, Sump, SW-3,

#10BB Housings

144368 Wrench, Sump, SW-4, #20BB Housings

144880 Wrench, Sump, Big Clear



O-Rings

Buna-N FDA Grade

151121 237 for #5 & #10 Slim

Line™ Housings

151120 241 for #10, #12 & #20 Housings

Pio Dina O Di

151122 Big Blue* O-Ring

Silicone FDA Grade

158096 237 for #5 & #10 Slim Line™ Housings 151118 241 for #10, #12 and #20 Housings

Viton

157193 012 Kit for Vent Plugs

158095 237 for #5 & #10 Slim Line™ Housings 151117 241 for #10, #12 and #20 Housings



These gauges can be read from both sides. They tell the user when to change the cartridge while the filter is in operation. They are easily mounted directly to MM (Meter Mount) caps with screws provided. Both are constructed of glass-filled nylon, Buna-N O-rings, 304 SS spring. 143549 contains a ceramic magnet.

Color Change Differential Pressure Gauge

Green and red color indicate when cartridge should be changed. Green (clean) 0-7 psid; Red (change) 7-10 psid. Item # 143550





Needle Differential Pressure Gauge

Needle points to international standard colors to determine when cartridge needs to be changed. Green (clean) 0-6 psid; Yellow (change) 6-9 psid; Red (dirty) 9-12 psid. Item # 143549











BING & HEATING LTD.

LYLE STENGER

Phone: (403) 526-2251

Fax: (403) 529-9316

19 Rossland Drive S.E.

Email stengers@telusplanet.net Medicine Hat, AB T1B 2B5

"Serving Medicine Hat & Area Since 1976"

Ph: (403) 529-5931 Fax: (401 **504-1**



- - - 5.0 - 45-45 60.350 65-65 /4/ 1900 . 42-42 - 50-50 20 55-55 65.65 24 - 50.50 2/2 50-50 - 42-42 27 Dec 31,2011 - 1 Steady don going off Stark Excen. Replaced loop, everything book wasting. Clearly system.



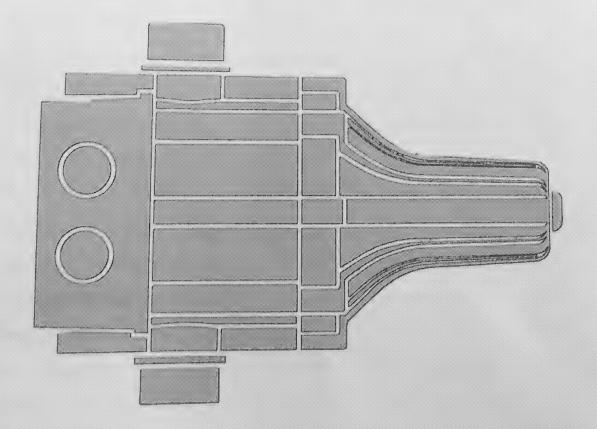
Mod MCA
Mod MCB > 115/230 VAC DUAL VOLTAGE UNIT

AND GONTROLPRES TM

Mod, CP 115/230 VAC DUAL VOLTAGE UNIT

INSTALLATION AND OWNER'S MANUAL

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION



INSTALLER - PLEASE LEAVE THIS MANUAL WITH THE UNIT OR GIVE TO END USER.

The installer and consumer must comply with all local and National Electric Code requirements when installing this unit.

fortunes is not responsible nor liable for damage due to improper installation or use.

Installation and Operating Instructions

RULES FOR SAFE OPERATION

- This is a diaphragm type pressure tank for use on a cold, well water system. Maximum operating pressure for this tank is 10 bar. The system must be protected with a suitable relief valve.
- → WARNING: FAILURE TO INSTALL A RELIEF VALVE MAY RESULT IN TANK EXPLOSION IN THE EVENT OF A SYSTEM MALFUNCTION, RESULTING IN PROPERTY DAMAGE. SERIOUS PERSONAL INJURY OR DEATH.
- Be sure that electric power to the pump or control box is disconnected before installing or servicing this tank or water system.
- Installation must be in accordance with local or state plumbing codes.
- Be sure to profect tank, piping and all system components from freezing temperatures.
- If diaphragm tank is replacing a plain steel galvanized tank be sure to remove existing air volume controls, and remove or plug any bleeder valves, snifter valves, etc.

Check tank precharge with ordinary tire gauge. Pre-charge should be equal to, or 2 psi below, pressure switch cut-in setting.

CUT-IN PSI	CUT-OFF PSI	PRE-CHARGE PRESSURE			
20	40	18 PSI			
30	50	28 PSI			
40	60	38 PSI			

- 1. Lay carton on its side.
- 2. Open bottom flaps and pull tank just until hole in tank skirt is visible.
- 3. Install nipple, and/or Tank "T" and other required fittings.
- 4. Stand tank upright and lift off carton and protective bag.
- 5. Locate tank where it is to be installed
- 6. If flooring is uneven, level as necessary.
- Make pipe connections as necessary in accordance with local codes. Pipe size from tank to service should be the same as pipe size from pump to tank.

SEE TYPICAL INSTALLATIONS ON BACK

Instrud'installation e

PRÉCAUTIONS POUR UN FON

- Cecrest un réservair sous proutifisation avec un système d'inax male d'operence pour ce système doit être protège ave convenable.
- ADVERTISSEMENT: LE DEF SOUPAPE DE SURETÉ PEL EXPLOSION DU RÉSERVOI FONCTIONNEMENT DU SY DOMMAGES MATERIELS, D PERSONNE, OU LA MORT
- Vérifier que l'alimentation é panneau de controle électr d'installer ou de réparer le pompage.
- L'installation doit respecter provinciaux.
- Protèger le réservoir, les ca du système contre le gel
- Si le réservoir à diaphragm galvanisé ordinaire, retirer l existantes et retirer ou bour purge, valves à décalage, e

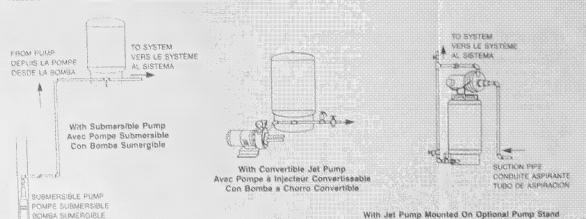
Vérifier la pression initiale de de pression de gonflage ordi égale à la pression d'enclend inférieure de 0,14 kg/cm² à la

PRESSION	
D'ENCLENCHEMENT	DECLE
1,41	,
2,11	,
2,81	*

- 1. Poser le carton sur le côté.
- Ouvrir les pans du bas et s gue le trou situé dans la jus
- Installer le manchon et/ou réservoir et tous les autres
- Mettre le réservoir en posit carton et le sac de protecti
- 5. Placer le réservoir à l'endr
- Mettre des cales sous le ré uniformément plat.
- Faire les raccordements de besoins tout en respectant de la canalisation reliant le même que celui de la cana réservoir.

CF. INSTALLATION

Typical Installations III Installations Types III Instalaciones Tipicas

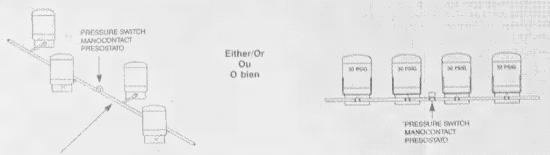


With Jet Pump Mounted On Optional Pump Stand

Avec Pompe à Injecteur Montée sur un Support de Pompe en Option

Con Bomba a Chorro Montada Sobre Pedestal Opcional

Typical Multiple Tank Installations III Installations Types À Plusieurs Réservoirs III Installaciones Tipicas De Tanques Multiples



HEADER TO BE SIZED FOR MAXIMUM VELOCITY OF BIT, SEC LE DIAMÉTRE DU COLLECTEUR DOTE ÉTRE DIMENSIONNÉ POUR PERMETTRE UNE VITESSE MAXIMALE DE 183 M/SEC EL FUDO COLECTOR DE DE ESTAR DIMENSIONADO PARA UNA VELOCIDAD MAXIMA DE 6 PIES/SEG.

A word on pressure switch settings

- Many pressure switches today have a fixed differential of 20 psi with only one adjusting nut for cut-in pressure. Cut-in plus differential equals cut-out pressure.
- Do not adjust air charge in tank beyond what your desired cut-in pressure is. Check air charge in tank with tire gauge before starting pump. Operating pressure adjustments should be made only to the cut-in pressure adjusting nut on the pressure switch.
- On those pressure switches having a differential pressure adjustment nut, it is advisable to leave it alone. Adjust cut-in pressure (the tall nut) only.

Quelques mots sur le réglage des manocontacts

- Aujourd'hul, de nombreux manocontacts ont une pression différentielle fixe de 1,45 kg/cm² avec un seul écrou de réglage pour la pression d'encienchement, La pression de déclenchement est égale à la pression d'encienchement plus la pression différentielle.
- Ne pas ajuster la pression d'air du réservoir att-delà de la pression d'enclenchement désirée. Vénfier la pression d'air à l'intérieur du réservoir avec un contrôleur de pression de gonflage ordinaire avant d'actionner la pompe. Les ajustements de la pression d'exploitation doivent être limités à l'acrou de réglage de la pression d'enclonchement sur le manocontact.
- Pour les manocontacts munis d'un écrou de réglage de la pression différentielle, il est conseille de ne pas changer la position de cet écrou. Ne régler que la pression d'enclenchement (au moyen de l'écrou le plus haut).

Nota sobre los puntos de ajuste del presostato

- Hoy dia númerosos presostatos tienen una presión diferencial fija de 20 psi con una sola tuerca de ajuste para la presión de conexión. La presión de corte es qual a la presión de conexión más la presión diferencial.
- No ajustar la carga de aire en el tanque a un valor superior a la presión de conexión deseada. Verificar la carga de aire en el tanque con un medicor de presión para llantas antes de arrancar la bomba. Los ajustes de la presión de trabajo deben efectuarse únicamente en la fuerca de ajuste de la presión de conexión situada en el presostato.
- Para los presostatos dotados de una tuerca de ajuste de presión diferencial, se aconseja no cambiar la posición de la tuerca. Ajustar la presión de conexión (mediante la tuerca más ata) solamente.

Rev. 060701

620,0007

MOVATEK

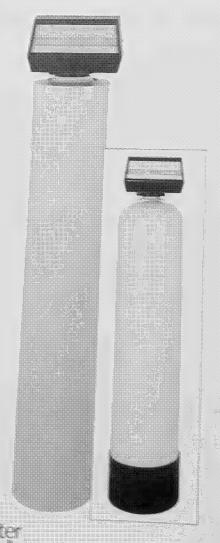
Novaclean Automatic Water Filters

"Enjoy clean and clear water"

Common water problems such as unpleasant taste and odor, discoloration, acidity or haziness caused by sediment can be solved with the appropriate Novaclean water filter. Enjoy cleaner, fresher laundry; clean, clear drinking water; sparkling and stain-free dishes and fixtures.

Reliable 12 day calendar clock control valve

Novatek's reliable control valve schedules regeneration to occur at regular preset intervals based on your estimated water use.



Features

- Exclusive Novatek programmable composite control valve with a five year guarantee
- Heavy duty fiberglass tank with a lifetime guarantee
- Tank jacket standard on 8", 9" and 10" tanks
- Bypass valve for ease of installation and service

Novaclean ACF Activated Carbon Filter Specifications Tuple of int tastes, and other caused by chloring or organic substances, such as decased vegetation and resoof an articular by quality activated carbon. Occasional backwashing is necessary to free the lifter bed of implies and ready it for operation again.

Model No.	Carbon Flow Rates USGPM				Installation States	
Description	Gu Ft	Service	Peak	Backwash	WXDYH	45,
Park to be a	1871			3.5	10° 2 10 2 5	85
PACETO	10		7	5	12 * 17 * 1	93
nactic	1.5		10	7	14 x 14 x 60	105
NACEST	2.0	10		14	16,7 15 11	

Novaciean MMF Multimential Management and the second secon

suspended particulate matter, such as olds and all, which gives realer as it as a green cause, is trapped in the The bed to produce clean clear water. A viriety of provide and study better its more thorough backwashing and prevents channeling

Model No Description	Medica Curil		er Carlo II. S	Backwash	inches WxDxH	Fiberglass Tank Size Inches	Shipping Weight Lbs
*NAME 75	96.		8	4	10 × 10 × 57	8 x 47	95
*NMMF10	10	5	7	5	11 x 11 x 58	9 x 48	145
NMM 15	(4)	7	10	7	12 x 12 x 64	10 x 54	213
NMMF20	2.0	10	12	10	14 x 14 x 62	12 x 52	265

Novaclean NF Neutralizing Filter Specifications

Novaclean NF contains special media which raises the pH of acidic water and neutralizes its acidic characteristics. In addition to protecting pipes, plumbing fixtures and appliances, this filter also facilitates the removal of iron and manganese by raising the pH to enable an iron filter to be used. Occasional backwashing cleans the bed. After one or two years, additional media may be required.

Model No. Description	Media Cu Ft	Flow Rates USGPM			Installation Space	Fiberglass Tank Size	Shipping Weight
		Service	Peak	Backwash	WxDxH	Inches	Lbs
*NNF75	.75	2	3.5	3.5	10 x 10 x 57	8 x 47	75
*NNF10	1.0	3	5	4	11 x 11 x 58	9 x 48	115
'NNE15	1.5	5	8	5	12 x 12 x 64	10 x 54	165
NNF20	2.0	6	10	7	14 x 14 x 62	12 x 52	215

Above models confilled and approved for sale in the State of Wisconsin.

Peak flow rater entended for informittent use only (10 minutes or less) and are for residential applications only. Do not use peak flow rate for commercial applications or for a continuous rate when treated water supplies are geothermal heat pump, swimming pool, etc.

At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.

For satisfactory operation, the pumping rate of the well system must equal or exceed indicated backwash flow rate.

For righer flow rates and multi-unit systems, see commercial filter specifications.

The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without disjustion to change previously manufactured products or to note the change

580 Park Street, Regina, SK S4N 5A9 265 Industrial Road, Cambridge, ON 193 Osborne Road, Fridley, MN 55433

Novaclean Automatic Water Filters

Operation Manual

ACF Activated Carbon Filter, MMF Multimedia Filter and NF Neutralizing Filter

Page 5 of this manual contains important maintenance procedures for the continued proper operation of your unit. These MUST be performed regularly for your guarantee to remain valid.

NOVATEK

Novaclean ACF Activated Carbon Filter Specifications

Uncleasant tastes and odors caused by chlorine or organic substances, such as decayed vegetation and run-off are adsorbed by quality activated carbon. Occasional backwashing is necessary to free the filter bed of impurities and ready it for operation again.

Alexandra	Carbon	F	ow Hales USG	PM .	Installation Space Inches		
	.		Pouls	darkwa a	10 x 10 x 57	8 x 47	45
NACETS:	.75	4	5	3.5	12 x 12 x 57	10 x 47	65
"NACE 15	1.5	7	10	7	14 × 14 × 62	12 x 52	93
NACES TO	2.0	10	177-127 Ta	10	16 x 16 x 60	14 x 50	105

Novaclean MMF Multimedia Filter Specifications

Suspended particulate matter, such as clay and silt, which gives water a cloudy appearance, is trapped in the filter bed to produce clean, clear water. A variety of gravels and sand facilitates more thorough backwashing and prevents channeling

Model No. Description	Media	The F	ow Rates USG	PM	Installation Space Inches	Fiberglass Tank Size	Shipping Weight
	CuFI	Service	Peak	Backwash	WXDXH	Inches	26262 Lbs 3
*NMMF75	.75	4	5	4	10 x 10 x 57	8 x 47	95
::NMMF10	1.0	5	7	5	11 x 11 x 58	9 x 48	145
NMMF15	1.5	7	10	7	12 x 12 x 64	10 x 54	213
NMMF20	2.0	10	12	10	14 x 14 x 62	12 x 52	265

Novaclean NF Neutralizing Filter Specifications

Novaclean NF contains special media which raises the pH of acidic water and neutralizes its acidic characteristics. In addition to protecting pipes, plumbing fixtures and appliances, this filter also facilitates the removal of iron and manganese by raising the pH to enable an iron filter to be used. Occasional backwashing cleans the bed. After one or two years, additional media may be required.

Model No. Description	Media	Flo	w Rates USQ	PM	Installation Space Inches	Fiberglass Tank Size	Shipping Weight
12.00	WH	Service	Peak	Backwash		Inches	Lis
*NNF75	.75	2	3.5	3.5	10 x 10 x 57	8 x 47	75
*NNF10	1.0	3	5	4 (11 x 11 x 58	9 x 48	115
*NNF15	1.5	5	8	5	12 x 12 x 64	10 x 54	165
NNF20	2.0	6	10	7.55	14 x 14 x 62	12 x 52	215

bove models certified and approved for sale in the State of Wisconsin

*Above models certified and approved for sale in the State of Wisconsin
Peak flow rates intended for intermittent use only (10 minutes or less) and are for residential applications only. Do not use peak flow rate for commercial applications or for a continuous rate when treated water supplies are goothermal heat pump, swimming pool, etc.

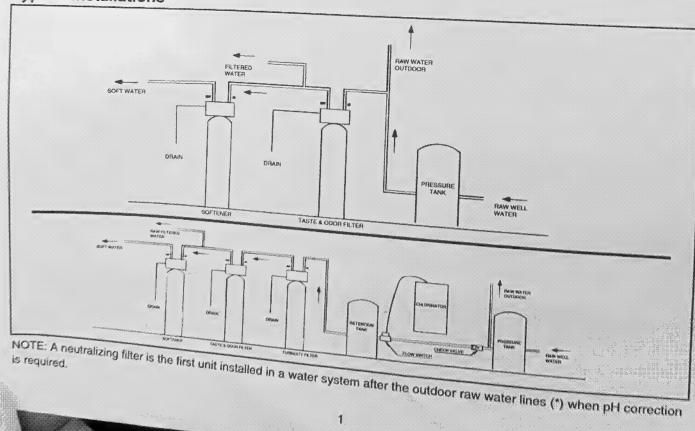
At the stated service flow rates, the pressure drop through these devices will not exceed 15 psig.

For satisfactory operation, the pumping rate of the well system must equal or exceed indicated backwash flow rate.

For higher flow rates and multi-unit systems, see commercial filter specifications.

The manufacturer reserves the right to make product improvements which may deviate from the specifications and descriptions stated herein, without obligation to change previously manufactured products or to note the change.

Typical Installations



Installation and Start-up Procedure

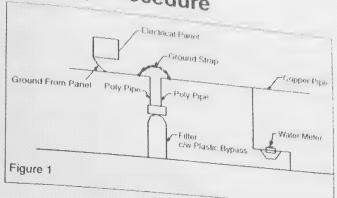
Installation Instructions

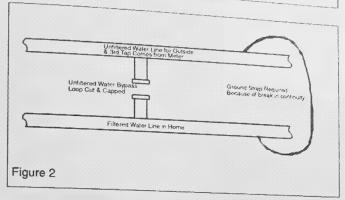
CAUTION: If the ground from the electrical panel or caution. to the water meter or underground copper breaker to the copper water lines and these lines are give is tied to the copper water lines and these lines are one is new installation of the Noryl bypass valve and/or out during installation of the Noryl bypass valve and/or poly pipe, an approved grounding strap must be used pay pipe the two lines that have been cut in order to be seen the two lines that have been cut in order to be seen the seen cut in order to be seen the seen cut in order to be seen cut in order to b pervetti maintain continuity. The length of the grounding strap will maintain continuity being install maintain upon the number of units being installed and/or depend up of copper pipe being replaced with poly. See the amount of copper pipe being replaced with poly. Figure 1.

in all cases where metal pipe was originally used and is lift all cases and is later interrupted by poly pipe or the Noryl bypass valve, as in Figure 1 or by physical separation as in Figure 2, to as in Figure 2, to maintain proper metallic pipe bonding, an approved ground clamp c/w not less than #6 copper conductor must be used for continuity.

check your local electrical code for the correct clamp and cable size.

NOTE: This timer's programs will be out of sync if you tum the knob too far or do not allow the drive motor to stop completely before continuing to the next step. If this happens while doing any procedure, rotate the knob clockwise until the white dot lines up with the time of day arrow and the unit will return to the service position. You can then start again.





- 1. Place filter on a flat surface in desired location, near a drain and 115 volt AC outlet. Subjecting your filter to freezing or to water temperatures above 120°F (49°C) will void the warranty. Remove the valve from the carton. Be sure the distributor tube is in place. Carefully position the valve over it and turn securely on to the fiberglass tank.
 - All multimedia filters and some larger filters are supplied with the media separate. Please refer to Page 5 Installation & Replacement of Filter Media Pak.
- 2. Attach the installation kit or bypass to the control valve. Make inlet and outlet water connections to meet applicable plumbing codes. A 3/4" inlet line is recommended. When sweat fittings are used, solder the adapters for the inlet and outlet to the copper pipe first. This procedure is necessary because the controls must not be subjected to temperatures above 160°F (71°C). Then, using teflon tape, screw the adapters for the inlet, outlet and drain into the valve. CAUTION: do not use pipe thread compound as it may attack the materials in the valve body.
- 3. On the drain, use 1/2" hose barb supplied and full 1/2" hose (not supplied) for the drain line and make the shortest run to a suitable drain. The drain line must be secured in position at the end which discharges into the drain so it cannot be inadvertently moved from the drain.
- Loosen the two screws on the timer cover to remove it from the timer.
- 5. Automatic water filters are supplied from the factory in the BACKWASH position, ready for start up. Turn on the water supply to the unit. Open the supply line slowly and allow the air to escape from the filter before turning the supply water on all the way. Allow the unit to backwash until all the air and media fines are no longer showing at the drain. This may take up to 15 minutes so you need to unplug the timer until you are ready to continue.
- 6. Plug the timer in, set the time and frequency of regeneration following instructions on Page 4. Allow the unit to complete the cycle on its own from this point.
- 7. Make sure the bypass valve is in the service position.

ALL GOVERNMENT CODES GOVERNING INSTALLATIONS OF THESE DEVICES MUST BE OBSERVED.



Programming Backwash Controls

Setting The 24-Hour Timer

Press and hold the red button in to disengage the drive gear. Turn the large dial until the actual time of day is opposite the time of day pointer. Release the red button to re-engage the drive gear.

Determining The Backwash Frequency

The following table can be used to help determine the frequency of regeneration for MMF and ACF filters. Use this table as a guide – individual circumstances will require more or less frequent regenerations.

To set a neutralizing (NF) filter follow the table under mild conditions.

NOTE: Add one person if you have a dishwasher.

			MIL)			AVI	PAC	38			٤	XTR	EME		
No. of Persons	Ca	A07538	Clears	Rege	00000	on Free	SURFACE S	- No	of Tab	o Pust	host ou	tweens's		00111111000	************	
2	3	1	1	1	1	2	2	2	2	2	3	3	3	3	3	3
3	3	1	2	2	3	3	3	3	3	3	4	4	4	4	4	4
4	1	2	2	2	3	3	3	4	4	4	6	6	6	6	6	6
5	2	2	3	3	4	4	4	4	6	6	6	6	12	12	12	1:
6	2	2	3	3	-4	4	4	6	6	6	6	12	12	12	12	1
7	2	3	3	4	4	6	6	6	12	12	12	12	12	12	12	4
8	2	3	3	4	6	6	6	6	12	12	12	12	12	12	12	1;
9	3	3	4	4	6	6	12	12	12	12	12	12	12	12	12	1
10	3	4	4	6	6	12	12	12	12	12	12	12	12	12	12	1

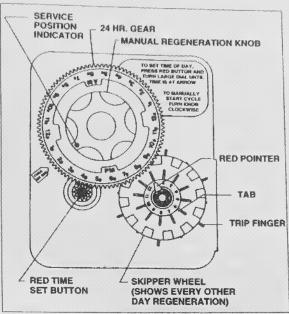


Figure 4

Setting The Backwash Frequency

The filter control features a skipper wheel with twelve numbered tabs and trip fingers. Each represents one day of a twelve day schedule. By adjusting the skipper wheel tabs, the control can be programmed to backwash every second, third, fourth, sixth or twelfth day, according to your requirements.

The control is shipped with all the skipper wheel tabs pushed outwards. You must push the tabs in toward the

No. of backwashes required in		Skipper Wheel Tab Settings												
12 days	1	2	3	4	5	6	7	8	9	10	11	12		
1	Out	In	ln	ln	In	ln	In	In	In	In	In	In		
2	Out	In	In	In	ln	In	In	In	In	In	In	In		
3	Out	ln	In	Ĩn	Out	In	In	ln	Out	In	In	ir		
4	Out	In	(n	Out	ln	In	Out	In	In	Out	In	In		
6	Out	In	Out	Ìn	Out	In	Out	In	Out	In	Out	ìr		

center of the wheel (retracting the trip finger) for each day that backwashing is not required.

Rotate the skipper wheel until number "1" is at the pointer, leave this tab out. Moving clockwise round the skipper wheel, adjust the remaining tabs using the table as a guide.

Manual Regeneration

Turn the manual regeneration knob clockwise. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration process. The back center knob will make one revolution in approximately three hours and stop in the position shown in the drawing. Actual backwash time is 14 minutes. In any event, treated water may be drawn after rinse water stops flowing from the filter's drain line.

CDA 30-1TD-2TX

C/W 2 GPM BW, 1 GPM REFILL **#1 INJECTOR, & BYPASS** C/W SST 60 RESIN/RESUP FEEDER PART # 95001010 B5 **ORDER 6075 EMCO MEDICINE HAT** EMCO PO 7739069-00

60500700 VALVE 9100 XT

ITEM NUMBER



DESCRIPTION SOFTENER CDA 30 .1PTD-2TX SST60 RESIN 9100XT C/W SF BT

VALVE ___OF 4

Part # 95001010 B5 Order # 6075 Customer emco med hat PO 7739069-00 Unit CDA 30-1TD-2TX SST 60 Valve model / system CDA 30-1TD-2TX SST 60 VALVE 1 9100-1" XT DUFC 2 gpm Refill 1 gpm Injector 1 transformer 24V/120V meter PADDLE meter cable ELECTRONIC Piston STD Programmed 10-70-10-6 SST 60 RESIN -RESUP FEEDER Other

Quantity

26000

top of tank

Mineral Tank Size 9X48 2
Distribution 1" CONE

Media Per tank (Ft³) Per tank 2 beds required

12"-9.5"

resin SST 60 1
fine gravel 1/8 x 1/16 0.09 Bag #3
med gravel 1/4 x 1/8 0 Bag #2

coarse gravel 1/2 x 1/4 0 Bag #1 Bottom of tank

Quantity

Brine tank 100 L

GRID C/W well and safety floats

CDA 9100 PIPE SIZE

6 ft of 3/8" tubing PER BRINE TANK

MASTER PROGRAMMEND MODE CHART CD130

7.48 BO E Regul

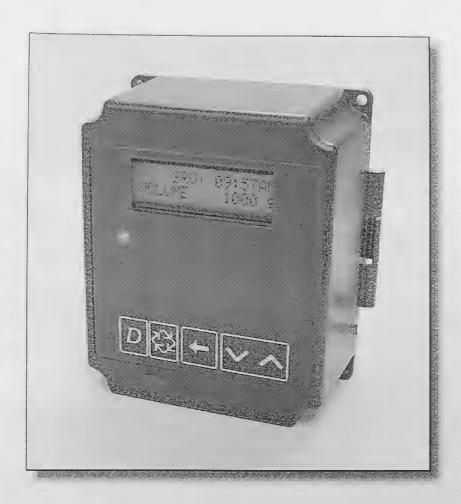
111

Coulon: Before entering Master Programming, please contact your local professional water dealer.

		Master Pro	granming Options
Asservation	Pacameter 1	Option Abbreviation	Options (
	Cauloy Formal	(631)	Gallens
	\$280 L28 C\$1000	111	Liters
		1 (1975)	Standard Downflow/Upflow Single Backwash
		dF2b	Standard Downflow/Upflow Double Backwash
77 V	Volum Town	Suc	Filter
	Valve Type	UF68	Upflow Brine First
		8500	TwinFlotoosxT
		Cithr	Other
		Fd	Meler (Flow) Delayed
27	Control Type	(FI)	Meter (Flow) Immediate
	74	lc	Time Clock
		zay.	Day of Week
NT.	Number of Tanks	1	Single Tank System
	- Convert of Names		Two Tank System
		U1	Tank 1 in Service
TS	Tank in Service	•	
	1200 K 1 1 O 0 1 V 1 2 0	U2	Tank 2 in Service
	Unit Capacity	126,000	Unit Capacity (Grains)
	Feedwater Hardness	15	Hardness of Inlet Water Seton Site
RS .	Reserve Selection	SF	Percentage Safety Factor
		rc	Fixed Reserve Capacity
SF	Safety Factor	10	Percentage of the system capacity to be used as a reserve
RC	Fixed Reserve Capacity		Fixed volume to be used as a reserve
00	Day Override	064	The system's day override setting
7.7	Regen Time		The time of day the system will regenerate
EW, SD, RR, BF	Regen Cycle Step Times	BU 10 BD \$0 RR 10 Ref. 11 &	The time duration for each regeneration step. Adjustable from OFF and 0-199 minutes. NOTE: If "Othr" is chosen under "Valve Type", then R1, R2, R3, etc, will be displayed instead
D2, D3, D4, D5, D6, & D7	Day of Week Settings		Regeneration setting (On or OFF) for each day of the week on day-of- week systems
CO	Current Day		The Current day of the week
		t0.7	3/4" Turbine Meter
		(P0.7)	3/4" Paddle Wheel Meler
		11.0	1" Turbine Meter
		P1.0	1" Paddle Wneel Meler
FM	Flow Meter Type	11.5	1.5° Turbine Meter
		P1.5	1.5* Paddle Wheel Meter
		P2.0	2" Paddle Wneel Meter
		Gen	Generic or Other Meler
X	Meter Puise Setting		Meter pulses per gallon for generic/other flow meter

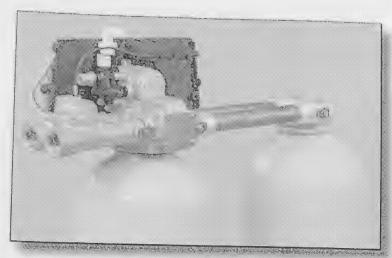
Notes: Same Items may not be shown depending on timer configuration. The timer will discard any changes and exit Master Programming Mode if any button is not pressed for sixty seconds.

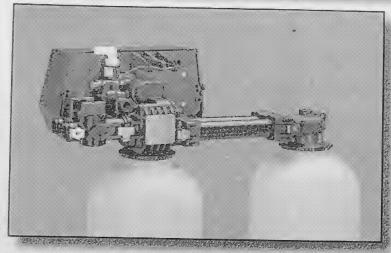
Service Manual

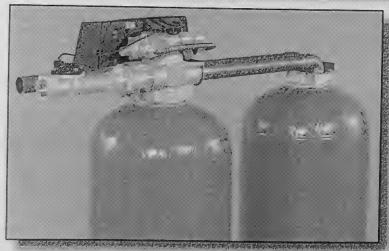


Model 9000/9100/9500

Service Manual







IMPORTANT: Fill in Pertinent Information on Page 3 for Future Reference

Pentair Residential Filtration, LLC **Limited Warranty**

Pentai Residential Filtration, LLC referred to herein as "we" or "us" manufactures its products ("Products") and parts ("Prats.) under the highest standards of weskmanship using quality materials. Accordingly, we warrant our Products and Parts as follows

WARRANTY COVERACE

- Flecks branded Products and Parts All Products and Plants are warranted to be free from defects in material and werkmanship under normal use and service for a period of five (5) years from the date of manufactured. Que to water conditions, some Product(s) or Part(s) may require maintenance or cleaning within the warranty period. Products or Parts returned due to debris build up will not be warranted (see exclusion A.3).
- Sorron branded Products and Parts All Products and Parts manufactured after January 1, 2010 are warranted to be free from defects in material and/or workmanship under normal use and service for a period of one (1) year from the date of shipment from our plant. Due to water conditions some Product(s) or Part(s) may require maintenance or cleaning during the warranty period. Product(s) or Part(s) returned due to debris build up will not be warranted (see exclusion A 3).
- WellMare® and ROmate® branded Products and Parts -Such as residential water system tanks installed in residential installations are warranted to the original owner to be free of defects in material and workmanship under normal use for a period of five (5) years from the date of installation. WellMate branded residential water system tanks installed in approved installations other than residential installations are warranted for two (2) years from the date of manufacture.
- Structural® PolyGlass™ Composite, FRP, CT, Brine and Park® International branded, or Pentair Water labeled, Products and Parts - Such Products and Parts are warranted to be free from defects in material and workmanship under normal use as follows:
 - All residential fiberglass tanks having diameters 13" and less are warranted for a period of ten (10) years from the date of manufacture.
 - All fiberglass tanks having diameters of 14" and greater are warranted for a period of five (5) years from the date of manufacture.
 - Tanks utilizing ABS liners that are installed for applications de-ionization conventional warranted for a period of five (5) years from the date of manufacture as follows: full coverage years 1-2, pro-rated (against 5 yrs) coverage years 3-5.
 - Brine tanks and cabinets are warranted to be free from defects in material and workmanship under normal use for a period of five (5) years from the date of manufacture.
- Comptec branded Products and Parts Comptec branded Products and Parts are warranted to be free from defects in material and workmanship under normal use as follows:
 - Replaceable air cells are warranted for a period of one (1) year from the date of installation.
 - Tank and other components are warranted for a period of five (5) years from the date of installation.
- All other Products and Parts (except for replacement) -Products and Parts are warranted to the original owner to be free of defects in material and workmanship under normal use for a period of one (1) year from date of This warranty covers all Products and manufacture. Parts (except for replacement) not specifically mentioned

G. Replacement Products/ Parts - Replacement Products or Parts are warranted for the remainder of the original warranty period or thirty (30) days from date of replacement, whichever is longer.

EXCLUSIONS FROM THIS LIMITED WAPPANTY - This warranty does not cover the following instances

- Exclusions applicable to all our Products/Parts
 - 1) Defects not reported to us within the applicable warranty period
 - 2) Any items manufactured by other companies. Such items may carry warranties offered by the original manufacturers.
 - 3) Problems resulting from failure to comply with installation, operation or maintenance instructions or drawings, or improper installation, operation or maintenance.
 - 4) Damage caused by acts of nature or problems resulting from abuse, misuse, negligence or accident.
 - 5) Problems resulting in whole or in part from alteration, modification or attempted repair of these Products or Parts by any party other than us or a party we have approved in writing.
 - 6) Pistons, seals, spacers, and brine valves on all hot water valves, AIO (Air Injected Oxidizer) valves, and valves exposed to excessive levels of the following list of contaminants require maintenance as part of a yearly service schedule.
 - a) Ozone: > 0.0 mg/l
 - b) Chlorine or chloramines: > 4mg/l)
 - c) pH: < 6 or > 9
 - Hydrogen Sulfide
 - e) Iron: in concentrations sufficient to cause scuffing on piston and seal surfaces
 - Manganese: in concentrations sufficient to cause scuffing on piston and seal surfaces
 - Sand and Suspended Solids: in concentrations sufficient to cause scuffing on piston and seal surfaces
 - with applicable 7) Noncompliance ordinances including without limitation, plumbing codes.
 - Damage due to impacts, corrosive liquids, gases or chemicals.
 - 9) Damage due to hydro-pneumatic or pneumatic use.
- B. Additional exclusions applicable to Park International, WellMate, ROmate, Comptee, CT, Structural PolyGlass Composite FRP and CodeLine branded Products/Parts: The warranty applies only to original owner at the original installation location and does not cover the following instances:
 - 1. Failure to operate tank in accordance with limitations stated on Product label.
 - 2. Failure to properly size tank to pump manufacturer's recommendations.
 - 3. Use of Product/Part with water containing sediment or
 - 4. Injury to tank or any part thereof caused by exposure to vacuum, freezing, external impact, chemical attack from liquid and gasses, fire, floods and lightning
 - 5. Liner abrasion caused by faulty distribution systems.

ile Number 110364 Order Date 17/02/2012

rder Number 10151

ustomer Name EMCO MEDICINE HAT

stomer PO 7732544-00 ig.

STERNGER

nit 1 COD 20-75TD-2TS - 850 RESIN

PART # 97000405 B1

CDA VALVE 9100-75" XT

CDA PIPES STANDARD

DA VALVE SPECS COD 20 DLFC 1.5 REFILL 1 INJECT 3 YELLOW CYCLE SETTINGS CYCLE TIME BW-10- BD-70 RR-10 REFILL 12 ACITY/HARDNESS 6.000 / 3 GRAINS -CONFIRM & SET ON SITE

OTHER

PISTON TYPE STANDARD METER PADDLE METER CABLE ELECTRONIC

INERAL TANK SIZE 12x52 - 2.5" TH <60

QUANTITY 2

DISTRIBUTION 1" CONE

MEDIA BED (FT3) 060- 12-52 A-850 RESIN 2 FT3 FINE GRAVEL 0.16 (16 LBS) EACH BED

MEDIA BED QUANTITY 2

LISTED TOP TO BOTTOM

BRINE TANK 140 L C/W SAFETY FLOAT -3/8" TUBING < 60

QUANTITY 1

UNIT COMMENTS

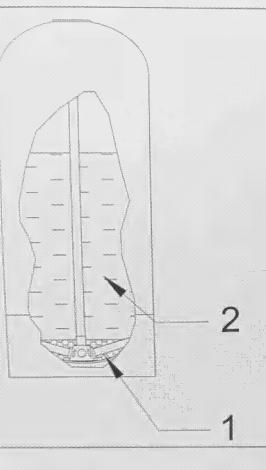
Before entering Master Programming, please contact your local professional water dealer.

		Master Progr	amming Options
previation	Parameter	. Option Abbreviation	Options
DE	Display Format	(GAL)	Gallons
	cropidy r ornial	Ltr	Liters
		(dF1b)	Standard Downflow/Upflow Single Backwash
		dF2b	Standard Downflow/Upflow Double Backwash
. 74		Filtr	Filter
VT	Valve Type	UFbd	Upflow Brine First
		8500	TwinFlo100SXT
		Othr	Other
		Fd	Meter (Flow) Delayed
		(FI)	Meter (Flow) Immediate
CT	Control Type	tc	Time Clock .
		dAY	Day of Week
		1	Single Tank System
NT	Number of Tanks	(2)	Two Tank System
		U1	Tank 1 in Service
TS	Tank in Service	U2	Tank 2 in Service
C. Tribing	Unit Capacity	6,000	Unit Capacity (Grains)
H	Feedwaler Hardness	2	Hardness of Inlet Water Setons to
	Reserve Selection	SF	Percentage Safety Factor
RS		(C	Fixed Reserve Capacity
SF	Safety Factor		Percentage of the system capacity to be used as a reserve
RC	Fixed Reserve Capacity		Fixed volume to be used as a reserve
DO	Day Override		The system's day override setting
RT	Regen Time		The time of day the system will regenerate
V, BD, RR, BF	Regen Cycle Step Times	BP 70 RR 10 RR 10	The time duration for each regeneration step. Adjustable from OFF and 0-199 minutes. NOTE: If "Othr" is chosen under "Valve Type", then R1, R2, R3, etc, will be displayed instead
D2, D3, D4, D5, D6, & D7	Day of Week Settings		Regeneration setting (On or OFF) for each day of the week on day-of-week systems
CO	Current Day		The Current day of the week
		(0.7	3/4" Turbine Meter
		(P0.7)	3/4" Paddle Wheel Meter
		11.0	1" Turbine Meter
	401 A A A A	P1.0	1" Paddle Wheel Meler
FM	Flow Meter Type	11.5	1.5" Turbine Meter
		P1.5	1.5° Paddle Wheel Meter
		P2.0	2" Paddle Wheel Meler
		Gen	Generic or Other Meler
X	Meter Pulse Setting		Meter pulses per gallon for generic/other flow meter

otes: Some items may not be shown depending on timer configuration. The timer will discard any changes and exit Master Programming Mode if any button is not pressed for sixty seconds.



SOFTENER LOADING CHART



MODEL COD 20

Order#

Tank Size 12" Diameter x 52"

TOP OF TANK

#2 A-850 RESIN (90 LBS)

2 FT³

#1 FINE GRAVEL 1/8" X 1/16" (16 lbs) 0.16 FT3

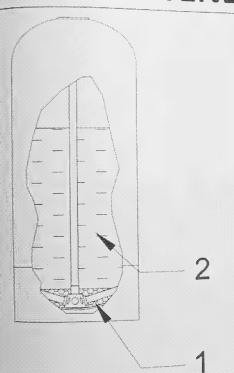
BOTTOM OF TANK

MEDIA WEIGHTS PER FT³
CANATURE RESIN 52 LBS /FT³ Standard bag is 1 FT³
ALL GRAVEL & FILTER SAND 100 LBS/FT³ Standard bag is 100 lbs

3-25-10

CONOTHAMERICA

SOFTENER LOADING CHART



MODEL COD 20

Tank Size 12" Diameter x 52"

TOP OF TANK

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#2 A-850 RESIN (90 LBS)

2 FT³

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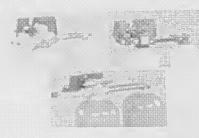


Pentair Water

Fleck Model 9000/9100/9500

Service Manual

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WATER CONDITIONER FLOW DIAGRAMS 9000/9500 WIRING DIGRAM	
SERVICE ASSEMBLIES	
	Aug.



JOB SPECIFICATION SHEET

Job Number:

Model Number:

Water Test:

Capacity Per Unit

Mineral Tank Size Diameter. Height.

Brine Tank Size & Salt Setting per Regeneration

9000-9100/9500 Control Valve Specifications.

1. Type of Timer:

- A \$2 minute available regeneration time, 1/15 RPM
- S. 164 minute available regeneration time, 1/30 RPM

2. Meter Size:

- A 3/4" Std Range (125 2,100 gallon setting)
- 8. 3/4" Ext Range (625 10.625 gallon setting)
- C. 1" Std Range (310 5,270 gallon setting)
- D. 1" Ext Range (1.150 26.350 gallon setting)
- £ 1-1/2" Std Range (625 10.625 gallion setting)
- F. 1-1/2" Ext Range (3,125 53,125 galfon setting)
- 3. Timer Gallon Setting:

4. Regeneration Program Setting:

A.	Backwash:	Minutes
8.	Brine and Slow Rinse:	Moute
C.	Rapid Rinse:	Minute

Gallor

- D. Brine Tank Refill:
- Drain Line Flow Control:
 Brine Refilt Rate:
 G
- 7. Injector Size: ___

EQUIPMENT CONFIGURATION

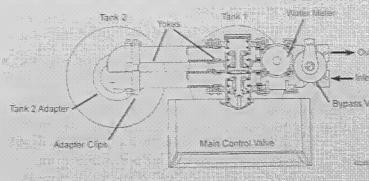
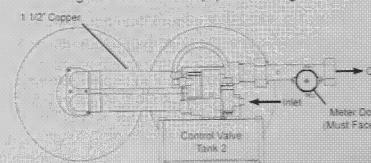


Figure 1 9000/9100 Equipment Configuration



Res-Up Cleaner

Res-Up Cleaner penetrates the resin bead pores to free accumulated iron and other impurities. Res-Up Cleaner protects against water softener component malfunctions caused by scale or other build-up.

Res-Up Feeder

This programmed feeder meters the appropriate volume of Res-Up Cleaner each time the resin bed is regenerated. The Res-Up Feeder can be programmed for the size of resin bed and the quantity of iron or other impurities in the untreated water.

Res-Up Feeders are easy to install and operate.



Res-Up Cleaner

Application Guide

Approx. Resin Bed Size	Delivery	Regeneration Cycle (12 Day Clock)								
	Feed	1 Cycle	2 Cycles	3 Cycles	4 Cycles	6 Cycles				
1204.11	Light Med Heavy	Yellow Yellow Yellow	Red Yellow Yellow	Red Red Yellow	Red Red Red	Red Red Red				
3/4 cu. h	Light Med Heavy	Yellow Clear Clear	Yellow Yellow Clear	Red Yellow Yellow	Red Red Yellow	Red Red Yellow				
1 ou it de Res-Opis o	Light Med Heavy	Clear Clear Clear	Yellow Yellow Clear	Yellow Yellow Yellow	Yellow Yellow Yellow	Red Yellow Yellow				

Order Number	Feeder Size	Colour Code	Average Delivery Per Day	Unit Ctn.	Ctn. Wt. Lbs	
33044	3 pints	Red Tubing	27 oz. 8.0 cc	12	7	
33010	3 pints	Yellow Tubing	.40 oz. 12.0 cc	12	7	
33018	3 pints	Clear Tubing	1 00 oz. 30.0 cc	12	7	
33011	1 quart	Res-Up (Res-Up Cleaner			
33009	1 gallon	Res-Up (4	40		

ofite. In the event the resin bed is initially contaminated you may add quantities of Res-Up cleaner directly into the brine well to start the cleaning ston mmedialely

To Change Filter Cartridges

1. Turn off water supply to filter. If unit is Valve-In-Head style, rotate handle on top of housing to OFF position.

Depress pressure release button (if present) to relieve pressure in filter housing.

Unscrew housing using spanner wrench.

NOTE: When opening filter housing to change cartridge, it is common for O-ring/Gasket to lift out of housing and stick to cap.

4. Remove used cartridge and discard. Rinse out housing and fill about 1/3 full with water. Add about 2 to 3 tablespoons of bleach and scrub thoroughly with brush or sponge. Rinse thoroughly.

5. Remove O-ring/Gasket from sump and wipe groove and O-ring/Gasket clean. Lubricate O-ring/Gasket with a coating of clean silicone grease. Place O-ring/Gasket back in place and press O-ring down into the groove with two fingers (or place gasket on rim of sump).

NOTE: This step is important to ensure proper filter seal. Make sure the O-ring is seated level in the groove (or gasket is on rim of sump).

CAUTION: If O-ring/Gasket appears damaged or crimped it should be replaced at this time. See your local dealer for replacement parts.

6. Insert a new cartridge into the sump making sure that it slips down over the sump standpipe.

7. Screw the sump onto the cap and hand tighten. DO NOT OVER-TIGHTEN. Make sure cartridge slips over the cap standpipe.

8. Turn on the water supply slowly to allow housing to fill with water. When using a Valve-In-Head, rotate handle slowly to the ON (Filter) position.

9. Depress the pressure release button (if present) to release trapped air from filter.

Check for leaks before leaving installation.

WARNING: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the unit.

NOTE: An activated carbon cartridge (Taste/Odor) may contain a small amount of carbon fines (very fine black powder) and a new cartridge, after installation, should be flushed with sufficient water to remove the fines before using the water.

Each time you use water from your filtered water tap for drinking or cooking purposes, it is recommended that you run (flush) the tap at least 10 seconds prior to using water. This is particularly important if the water tap is not used daily.

NOTE: Certain types of harmless bacteria will attack cellulose material. Cartridges containing cellulose may seem to disintegrate, produce a "musty" or "moldy" odor, or form a black precipitate due to the bacteria. If you notice any of the above problems while using the cellulose media cartridges, switch to a synthetic media cartridge or consult the manufacturer.

NOTE: This replacement cartridge has a limited service life. Changes in taste, color and flow of the water being filtered are signals that replacement of the cartridge is or soon may be necessary.

CAUTION: Filter must be protected against freezing. Failure to do so may result in cracking of the filter and water leakage.

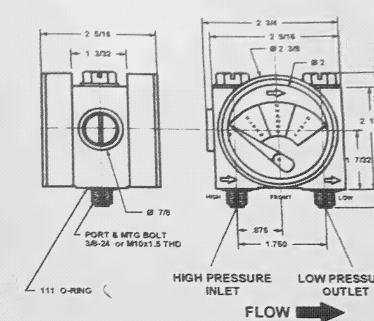
CAUTION: All filtration systems contain other parts that have a limited service life. Exhaustion of the service life of those parts often cannot be easily detected. Commonly, it is only after leakage has been observed or water damage has occurred that one is made aware that the service life has been exhausted.

IMPORTANT NOTICE: To prevent costly repairs or possible water damage we strongly recommend that the payl or sump of all plastic housings be replaced periodically: every five years for clear sumps, and every ten years paque sumps. If your sump has been in use for more that the recommended period, it should be replaced immediately. Be sure to date any new or replacement sump for future reference and indicate the next recommended replacement date.

PART NO 143549 3 - COLOR NEEDLE GAUGE

- BE SURE THE TWO O-RINGS ARE IN PLACE ON THE BOTTOM OF THE GAUGE BODY.
- TO MOUNT THE GAUGE ON YOUR FILTER HEAD:
 - A THREAD THE LOW PRESSURE TRANSMISSION BOLT INTO THE THREADED HOLE ON THE DOWN - STREAM SIDE OF THE FILTER HEAD. (OUT - PORT ON THE FILTER) HAND TIGHTEN.
 - B THREAD THE HIGH PRESSURE TRANSMISSION BOLT INTO THE THREADED HOLE ON THE UP - STREAM SIDE OF THE FILTER HEAD (IN - PORT ON FILTER) TORQUE BOTH BOLTS TO 20 IN-LBS., OR HAND TIGHTEN USING A COIN.

REVERSE THIS PROCEDURE TO REMOVE GAUGE FROM FILTER.



Standard Mounting Boss Caps

- Can be used with MC-LA bracket kit
- Differential pressure gauges cannot be used with these housings.

Blue Housings - NPT Thread

Rental C	Do	SCI D	liot				
150542	3G	×10	ST	BK/BL	3.41	MB	W/PR
150546	3G	#10	ST	BK/BL	3/25	MB	
150844	36	#20	ST	BK BL	351	MB	W/PR
50548	36	#20	ST	BK/BL	3/15	MB	



MB Cap W/PR



The 154638, 154642, 154584, 154588, 153200 and 153197 are Tested and Certified by NSF International to ANSI/NSF Standard 42 for material and structural integrity requirements only





MB Cap W/PR

ntegral Mounting Bracket Caps

Optional screw kit for integral bracket, part number 150580 sold separately.

Differential pressure gauges cannot be used with these housings.

lue Housings - NPT Thread

LCC TO #	L/CSCIIL	<u> </u>	<u>I</u>			
150550	3G #10	ST	BK/BL	3/4"	IB	W/PR
150554	3G #10	ST	BK/BL	3/4**	IB	
150552	3G #20	ST	BK/BL	3/4"	IB	W/PR
50556	3G #20	ST	BK/BL	3/4"	IB	



IB Cap W/PR

The 154646, 154650, 154600, 154604, 153200 and 153197 Tested and Certified by NSF International to ANSI/NSF Stand 42 for material and structural integrity requirements only

ear Housings - NPT Thread

Item #	De	scrip	tior				
50566	3G	#10	ST	BL/CL	3/4**	IB	W/PR
50570	30	#10	ST	BL/CL	3/4**	IB	
50568	3G	#20	ST	BL/CL	3/4"	IB	W/PR
50572	3G	#20	ST	BL/CL	3/4**	IΒ	



IB Cap W/PR

tegral Bracket Meter Mount Caps

ptional screw kit for integral bracket sold separately. ap contains predrilled and tapped holes for mounting differential pressure gauges.

ie Housings - NPT Thread

15 TL 3	Dc	crip	<u>tion</u>					
50574	36	#10	ST	BK/	BL	74°°	ММ	W/PR
50576	3G	#20	ST	BK	BL	34**	MM	W/PR



UTION: Housing will not hold pressure without an installed differential pressure gauge.



MM Cap W/PR

The 154654, 154658, 153200 153197 are Tested and Certified International to ANSINSF Stan for material and structural into requirements only.

COMPONENT

22 No. 10

 MB = Mounting Bosses for MC-1A bracket

IB = Integral Bracket

MM = Meter Mount for Differential Pressure Gauges

BT = British Threads

W/PR = With Pressure Release (blank) = Without Pressure Release

150566	3G #10 ST BL/CL ¾" IB W/PR	
150570	3G #10 ST BL/CL ¾" IB	
150568	3G #20 ST BL/CL ¾" IB W/PR	
150572	3G #20 ST BL/CL 3/4" IB	



Integral Bracket Meter Mount Caps

- Optional screw kit for integral bracket sold separately.
- Cap contains predrilled and tapped holes for mounting differential pressure gauges.

Blue Housings - NPT Thread

Item #	Descrip	tion	
150574	3G#10	ST BK/B	L 3/4" MM W/PR
150576	3G #20	ST BK/B	L ¾" MM W/PR

CAUTION: Housing will not hold pressure without an installed differential pressure gauge.



MM Cap W/PR

Key

ST = Standard MB = Mounting Bosses for MC-1A bracket

BK = Black IB = Integral Bracket

BL = Blue MM = Meter Mount for Differential Pressure Gauges

CL = Clear BT = British Threads

W/PR = With Pressure

W/PR = With Pressure (blank) = Without Pres





WATER FILTER LOCATED DOWNSTREAM OF THE IRON GUARD WATER SOFTENER								
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MAINTENANCE LOG

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Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SW, Medicine Hat, Alberta, T1B 2B5, phone 403-526-2251, fax 403-529-9316, e-mail:stengers@telusplanet.net

MAINTENANCE LOG WATER FILTER LOCATED DOWNSTREAM OF THE IRON GUARD WATER SOFTENER SERVICE PERSON TO ENTER DATE & INITIAL MAINTENANCE WORK THAT WAS COMPLETED DIFFERENTIAL PRESSURE CHECKED DATE **FILTER CHANGED** NO NO



Installation, Operation and Maintenance

Owner's Manual



Non-certified:

SC-200, SC-320, SC-600, SC-740, SCM-200, SCM-320, SCM-600, SCM-740

NSF Standard 55 Class B Certified:

SCV-200, SCV-320, SCV-600, SCV-740, SCMV-200, SCMV-320, SCMV-600, SCMV-740

Manufactured in Canada by

VIQUA

A TREATABLE TO ENFORCE AND SECONDARY

425 Class Rd W. Guelph, Ontario, Canada NTL 1111 L (+1) 5.19 763-10/17 * 1f. 1 800-265-7246 (US and Canada only). 1 + 11 / 1 62 1 81 16 (Lumps only) * f. (+ 11 5 19 763 5069 a mail introducing com www.viqua.com











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get genuine

If it's NOT a genuine Sterilight lamp

it shouldn't be part of your system.

Each component of your VIQUA system has been designed and developed through extensive research and development to be part of an overall system that operates safely and efficiently over its entire lifetime.

Genuine lamps guarantee:

- Safety certified. Replacement with any other lamp voids NSF 55 and UL/CSA/CE certification and compromises safe lamp performance. Using non-genuine lamps results in electrical code no longer being met and safety is at risk
- VIQUA provides its equipment with complete safety certifications and warranty for its components. Using genuine lamps ensures the maintenance of your system's warranty. VIQUA cannot warranty any system component if non-genuine lamps are used
- VIQUA systems are third-party validated ensuring effective output and disinfection. Tested and proven system performance ensures disinfection is always achieved.
- VIQUA lamps are LongLife coated for stability, longer life and increased efficiency. Even lamps that look the same will not perform the same.
- Environmentally friendly: Your lamps can be recycled at the end of lamp life. Refer to www.lamprecycle.org for information on recycling in your area.

Sterilight



Typical Sterilume® series lamps used in our Sterilight products can be partially identified by the white, green, orange, yellow or gray lamp base combined with our Sterilight branding.

Ensure the performance, safety and warranty of your Sterilight systems....request genuine lamps.

Trust genuine VIQUA lamps to deliver water confidence.

Use genuine lamps Avoid water safety and warranty issues.

Utilisez les lampes véritables Évitez les issues de súrete de l'eau et de garantie.

get genuine



get genuine

Sice n'est PAS une lampe Sterilight originale,

ne la montez pas dans votre système.

AVOIR CONFIANCE DANS L'EAU

Chaque composant de votre système VIQUA a été conçu et mis au point à la suite de recherche approfondies pour faire partie d'un système complet efficace qui fonctionnera en sécurite pendant toute sa durée de vie.

Garantie de lampes originales :

- Hornologation de sécurité. Le remplacement par n'importe quelle autre lampe annule l'hornologation NSF 55 et UL/CSA/CE et compromet le fonctionnement sécuritaire de la lampe. L'emploi de lampes non originales ne respecte pas le code de l'électricité et compromet la sécurité.
- VIOUA livre son matériel avec des homologations de sécurité complètes et une garantie pour ses composants. L'utilisation de lampes originales assure le maintien de la garantie de votre système. VIQUA ne peut pas garantir les composants de ses systèmes lorsque des lampes non originales sont utilisées.
- Les systèmes VIQUA sont validés par des tiers pour assurer l'efficacité du débit et de la désinfection. Le rendement éprouvé et vérifié du système assure que la désinfection a toujours lieu.
- Les lampes VIQUA ont un revêtement LongLife pour la stabilité, une longue vie et une efficacité accrue. Même si deux lampes ont la même apparence, elles n'ont pas le même rendement.
- Lampes écologiques : Vos lampes peuvent être recyclées à la fin de leur durée de vie. Consultez www.lamprecycle.org pour obtenir des informations sur le recyclage dans votre région.

Sterilight



Les lemdes de serie Steriume Bitypiques utilisées dans nos produits Stenlight se reconnaissent faciliement a leur socie diano verti orange jaune ou gris en plus de la marque Sterlight.

Assurez le rendement, la sécurité et la garantie de vos systemes Sterilight... exigez des lampes originales.

Vous pouvez avoir confiance dans l'eau lorsque vous vous fiez aux lampes originales VIQUA.

AVERTISSEMENT

United besitampes on ginales Eures es problèmes de Barannie et de securne De Fau

get genuine



475 that a Car Queen Sugar Canal A 174 March 1997

Sterilight PLATINUM

Replacement Components SPV Series

Model	Flow Rate	Replacement Lamp*	Replacement Quartz Sleeve	Replacement Controller	Replacement UV Sensor
37 .000	15 year 26 or	821787-2	W. C. W.	SPO-12-0	1040.00-22
S-1,400	2290 NORM	\$4108.040	2.5-2.7		284412.000
S. W. J. W. V.	33 3 cm	38007070	03-800	** *** *** *** *** *** *** *** *** ***	1840,00491
599-740	mgam 416 am	\$7%378,240	25-742	2*:-220	Z
\$25,020	74 7 AMARA 22 3 AMARA	\$740FL-0	25.27.2	271.75.40	114107.77
597415	18 gen (19 2 jen)	\$1008540	Q8-100		1500055
SFN-2.5	2.5 gpm (9.6 lpm)	\$18089-0	Q\$-190	\$70-01-0	18497/491
FV-3.5	3.5 gpm 13.2 rpm	320096-0	08-277	SPC-08-0	254107992
276	8 gcm (28.7 lpm)	Samaleo	QS-320	\$90-05-0	2545,9444.1
:P012	9 gom 30.3 pm	54103 LHO	25440	970-05-no	254577497
F.1.2	12 gam (48 4 lam)	SECORAGE	09-800	\$70.02.70	254%%*==2
=,-:8	15 gpm (58 8 lpm)	S740RLH0	0.5-74-0	\$20-03-0	202444222
20.20	20 gpm (75.7 lpm)	SSSORLHO	29-980	NOTE	127///451

amp installation/replacement instructions:

- 3. To replace the lamp, there is NO need to disconnect the system from the water supply, nor to drain the water from the reactor chamber. Lamp replacement is a quick and simple procedure requiring no additional or special tools. The UV lamp must be replaced after 9,000 hours of continuous operation (approximately one year) in order to ensure adequate disinfection. The controller will indicate when it is time to change the lamp. As a measure of safety, this should be done even if the monitoring system that is included with the system indicates that the intent of the lamp is still in a safe region.
- 2. Disconnect main power source and allow the unit to power down. Remove the Safety-Loc™ connector by sliding the metal retaining ring awa from the body of the connector. Remove connector and lamp from the reactor chamber. Once you can visually see the lamp, separate the lam from the connector. Do not twist the lamp from the connector, simply slide the two apart. Avoid touching the lamp on the glass portion. Hand the lamp at the ceramic ends is acceptable, however if you must touch the lamp glass, please use gloves, or a soft cloth. Fully remove the lam from the reactor chamber being careful not to angle the lamp as it is removed from the chamber. If the lamp is removed on an angle, pressure be applied on the inside of the quartz sleeve, causing the sleeve to fracture.
- 3. To install a new lamp, first remove the lamp from its protective packaging again being careful not to touch the lamp "glass" itself. Carefully institute lamp into the reactor vessel (actually inside the quartz sleeve). Insert the lamp fully into the chamber leaving about two inches of the lamp protruding from the chamber. Next, attach the Safety-Loc™ connector on the UV lamp. The connector is "keyed" and will only allocorrect installation in one position. Ensure the connector is fully seated onto the UV lamp.
- 4. Once the lamp is fully seated on the connector, slide the Safety-Loc™ connector over the aluminum retaining nut. Make sure the metal retaining ring on the Safety-Loc™ connector is pulled away from the body of the connector in order that the connector may slide fully over the retaining nut. Once the connector is located fully over the retaining nut, slide the metal ring back in to lock the connector in place. As this Safety-Loc™ connector is keyed to the reactor chamber, make sure the depression on the connector is located over the ground lug located on the reactor chamber.

Note: Even though the Safety-LocTM connector contains an integral safety interlock switch which prevents the lamp from physically being illuminated when the lamp is removed from the chamber, it is still imperative that the system be disconnected from the power source before removing the lamp or working on the system.



System Tested and Certified by NSF International against NSF/ANSI Standard 55 for Disinfection Performance, Class A. Models: SPV-200, SPV-600, SPV-740, SPV-950, SPV-15, SPV-25, SPV-35, SPV-86, SPV-12, SPV-15, SPV-20

COMPONENT

VIQUA - a Trojan Technologies Company
425 Clair Rd. W, Guelph, Ontario, Canada N1L 1R1
4.7 (+1) 519.763.1032 • tf. 1.800.265.7246 (US and Canada only) • t. +31 73 623 8116 (Europe only) • f. (+1) 519.763.5069

WARRANTY REGISTRAT J - CERTIFICAT DE GARANT	IE – REGISTRO DE GARANTÍA	To produce the production of the same of t
In order to activate your warranty you must register your product within 10 days of purchase – by mi de cette carte postale ou an ligne chez www.viqua.com – con el objetivo de activar tu garantia.	l'activar votra parantia vous davez aprenistrar votra ered.	uit en moins de 10 achet - soit par expéditive te o en lines en pégins www.vique.com
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address / adresse / cirección	See owners manual for complete warranty	X XX O T T A PA
1. Water Source / Source de l'eau / Origen del Ague :	information. Voyez le manuel du propriétaire pour l'information complété de garantie. Vea a los dueños manuales pare la información	VIQUA
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water treatment professional / professional / professional / professional / professional de trainiento de agua someone told me ebout it / quelqu'un m'en a parlé / saw it in a store / je l'ai vu dans un magasin / lo vi en una tiend de l'eau / professional de tratamiento de agua alguien me habitó de él	Part#	520016-8

Modèle	Débit nominal	Lampe de remplacement*	Gaine de quartz remplacement	Controleur de remplacement	Capteur UV o
\$20,000	15 gpm ,9 6 lpm)	S200RLHO	QS-200	SPC-ICE-HO	254NM-FP2
390410	5 8 gpm (21 9 lpm)	S410RLHO	QS-410	SPC-ICE-HO	254NM-FP2
SEV-600	8.8 gpm (33.3 lpm)	S600RLHO	QS-600	SPC-ICE-HO	254NM-FP2
591-740	11 gpm (41.6 lpm)	S740RLHO	QS-740	SPC-ICE-HO	254NM-FP2
SFV-950	14.6 gpm (55.3 lpm)	S950RL-HO	QS-950	SPC-ICE-HO	254NM-FP2
SPV415	1.5 gpm (13.2 lpm)	S100RLHO	QS-100	SPC-ICE-HO	254NM-FP2
\$ 2 \-2.5	2.5 gpm (9.6 lpm)	S150RLHO	QS-150	SPC-ICE-HO	254NM-FP2
SP1-3.5	3.5 gpm (13.2 lpm)	S200RLHO	QS-200	SPC-ICE-HO	254NM-5P2
SPL-8	6 gpm (22.7 lpm)	S320RLHO	QS-320	SPC-ICE-HO	254NM-FP2
591-5	S apm (30.3 lpm)	S410RL-HO	QS-410	SPC-ICE-HO	254NM-FP2
\$27.72	12 apm (45.4 lpm)	S600RLHO	QS-600	SPC-ICE-HO	254NM-FP2
SEX-15	15 gpm (56.8 lpm)	S740RLHO	QS-740	SPC-ICE-HO	254NM-FP2
\$26.70	20 apm (75.7 lpm)	S950RLHO	QS-950	SPC-ICE-HO	254NM-FP2

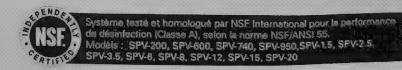
^{*} Les lampe utravic et ont une vie nominale d'operation de 9000 heures. Afin d'assurer l'eau saine, les lampes doivent être changées annuellement, avec les lampes véritables de Note: Cantacter l'usine pour optenir la liste des distributeurs agrees : tel: 519 763 1032, sans frais : 1,60

Instructions d'installation/remplacement de la lampe :

- 1. Pour remoiècer une lampe, il n'est PAS nécessaire de déconnecter le système de la canalisation d'eau, ni de vidanger la chambre du réacteur. Le remplacement de la lampe est une operation simple e rapide, qui ne nécessite aucun outillage spécial. Pour garantir une desinfection adéquate, of doit remplacer la lampe U.V. à intervalles de 9 000 heures de service continu (environ 1 fois par an). Le contrôleur signalera le temps venu la nece remo acement de la lampe. Par mesure de sécurité on devra alors remplacer la lampe, même si le système de surveillance inclut avec le système que il ntensite qui rayonnement emis par la lampe est encore satisfaisant.
- 2. Interramoré l'a⊬mentation électrique et laisser le processus de mise hors-tension s'exécuter. Enlever le connecteur Safety-Loc™ retiree la bague metal que de retenue du corps du connecteur. Enlever le connecteur et retirer la lampe de la chambre du réacteur. Lorsque la lampe devient visib la jampe du connecteur il suffit de separer les deux composants – ne pas effectuer un mouvement de torsion entre la lampe et le connecteur. Évi toucher la surface de verre de la lampe. Il est acceptable de manipuler la lampe par les extrémités de céramique; cependant, s'il est nécessaire de le tupe de verre, porter des gants ou utiliser un linge doux. Retirer complètement la lampé de la chambre du réacteur; veiller à ne pas incliner la la rapportiau réacteur durant son extraction; si la lampe est inclinée, une pression est exercée à l'intérieur de la gaine de quartz, et ceci provoquera l
- 3. Pour l'installation d'une lampe neuve, retirer d'abord la lampe de son emballage de protection; veiller encore à ne pas toucher la surface de verre ampe inserer prodemment la lampe dans le réacteur (en fait, à l'intérieur de la gaine de quartz). Insérer complètement la lampe dans le réacteur a sser la lampe depasser que de deux pouces hors de la chambre du réacteur. Ensuite, placer le connecteur Safety-Loc™ sur la lampe U.V. Le co comporte un repere de positionnement qui empéche un branchement incorrect. Veiller à ce que le connecteur soit parfaitement enfonce sur la la
- 4 porsque la connexion est parfaite entre le connecteur et la lampe, faire glisser le connecteur Safety-Loc™ par-dessus l'écrou de retenue d'alumin que le connecteur puisse glisser completement sur l'écrou de retenue, on doit veiller à ce que la bague de retenue métallique du connecteur Sai soit retirée du corps du connecteur. Larsque le connecteur est parfaitement placé par-dessus l'écrou de retenue, ramener en place la bague de r metalique qui immobilisera le connecteur. Le connecteur. Safety-LocTM comporte un repére de positionnement par rapport à la chambre du réac a se que la depression sur le connecteur soit située au-dessus de la vis de liaison à la terre située sur la chambre du réacteur.

fiste : Le connecteur Safety-Loc™ comporte un contacteur de sécurité qui empêche physiquement l'allumage de la lampe lorsqu'elle est retirée de ou reacteur, le est cependant impératif de déconnecter le système de la source d'alimentation électrique avant d'en retirer la lampe ou d'entreprend

COMPONENT



VIQUA - a Trojan Technologies Company

425 Clair Rd. W. Guelph, Ontario, Canada N1L 1R1.

t. 7+1) 515 763 1532 • sf. 1800 265 7246 (Canada et États-Unis) • t. +31 73 623 8116 (Europe uniquement) • f. (+1) 519 763 5069

courriel: 150@yqualcom www.viqua.com

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Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SW, Medicine Hat, Alberta, T1B 2B5 phone 403-526-2251, fax 403-529-9316, e-mail:stengers@telusplanet.net

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Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SW, Medicine Hat, Alberta, T1B 2B5
phone 403-526-2251, fax 403-529-9316, e-mail:stengers@telusplanet.net

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Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SW, Medicine Hat, Alberta, T1B 2B5 phone 403-526-2251, fax 403-529-9316, e-mail:stengers@telusplanet.net

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Dec 31,2011 - 1 Steady alon going off white Screen. Replaced loop, everything back working. Cleaned system.

C) OEI . 35 30 Dec 27 96 46.46 21 - 20 39.25.25 Dec 29 -30 - 50 12-20 20 11 31 -46 - 46 13. 32. 32 Jan 01 47 - 47 121-21-21 25, 25 · j - 45-45 1 25 30.30 27. 23. 23 11 07 25.25 33.31-35 11 6.8 -5.55.55 11 11 San Comment 25 30 - 20 15. 11 22. 22 2) 11 30 3,0 55 27 11 35--55-24 35 35 11

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MAINTENANCE LOG

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## MAINTENANCE LOG HUMIDIFIERS SERVICE PERSON TO ENTER DATE AND INITIAL MAINTENANCE WORK THAT WAS COMLETED **EAST HOUSE** WEST HOUSE CLEAN CLEAN OPEN OPEN TRAY, CLEAN CLOSE CLOSE OPEN OPEN TRAY, VALVE DAMPER DRUM, NEW VALVE DAMPER VALVE DAMPER DRUM, NEW CLOSE CLOSE OPEN OPEN TRAY, CLOSE CLOSE VALVE DAMPER VALVE DAMPER DRUM, NEW DATE (FALL) (FALL) FLOAT PAD (SPRING) (SPRING) (FALL) (FALL) FLOAT PAD (SPRING) (SPRING) (FALL) (FALL) FLOAT PAD (SPRING) (SPRING) Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SE, Medicine Hat, Alberta,

phone 403-526-2251, fax 403-529-9316, e-mail: stengers@telusplanet.net

## MAINTENANCE LOG REVERSE OSMOSIS SYSTEM SERVICE PERSON TO ENTER DATE AND INITIAL MAINTENANCE WORK THAT WAS COMPLETED PRE SEDIMENT AND POST CARBON FILTER FAST FLUSHING THE DATE CARBON FILTERS CHANGED CHANGED **MEMBRANE**

Stenger's Plumbing & Heating Ltd., 19 Rossland Drive SE, Medicine Hat, Alberta, phone 4030-526-2251, fax 403-529-9316, e-mail: stengers@telusplanet.net

## MAINTENANCE LOG WATER FILTER LOCATED DOWNSTREAM OF THE IRON GUARD WATER SOFTENER SERVICE PERSON TO ENTER DATE & INITIAL MAINTENANCE WORK THAT WAS COMPLETED DIFFERENTIAL PRESSURE CHECKED DATE FILTER CHANGED 04

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MAINTENANCE LOG					
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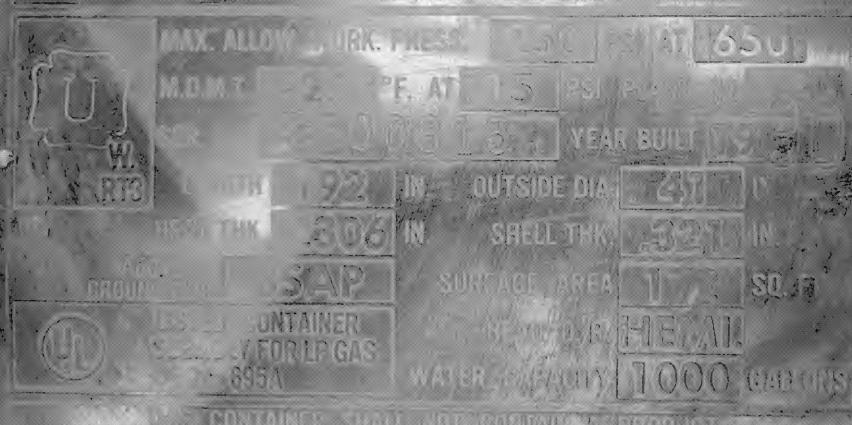






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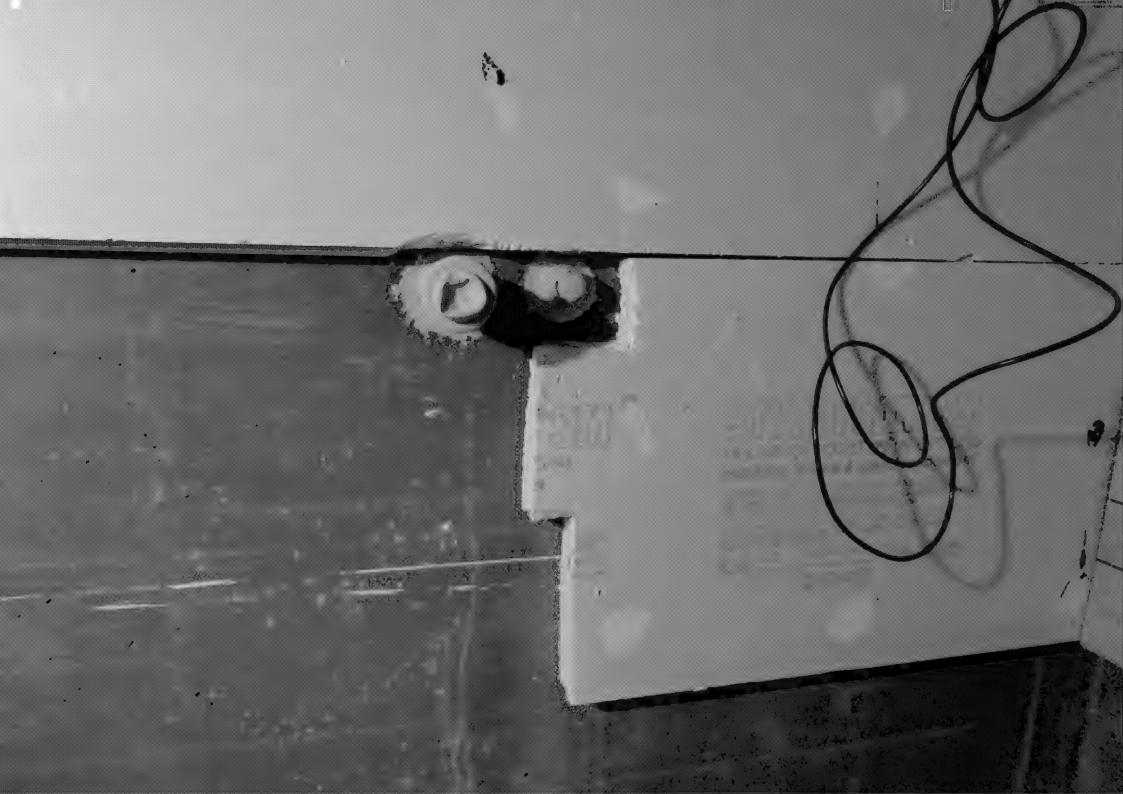


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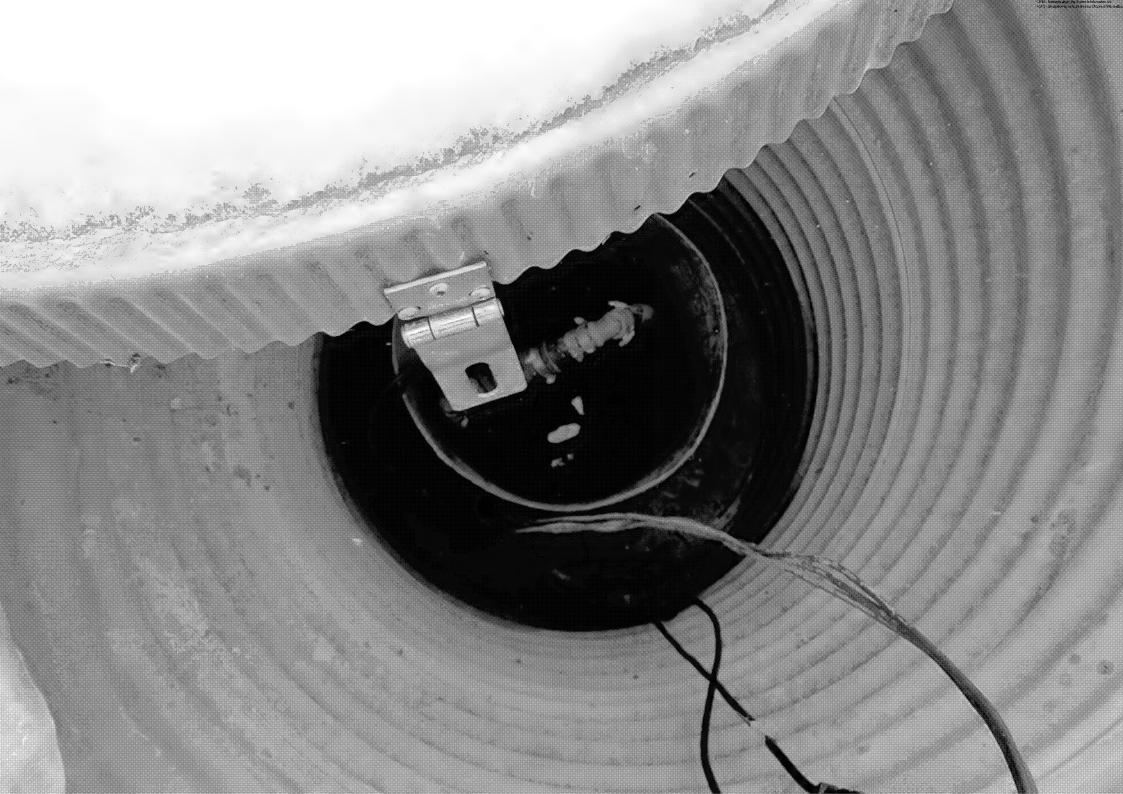












































































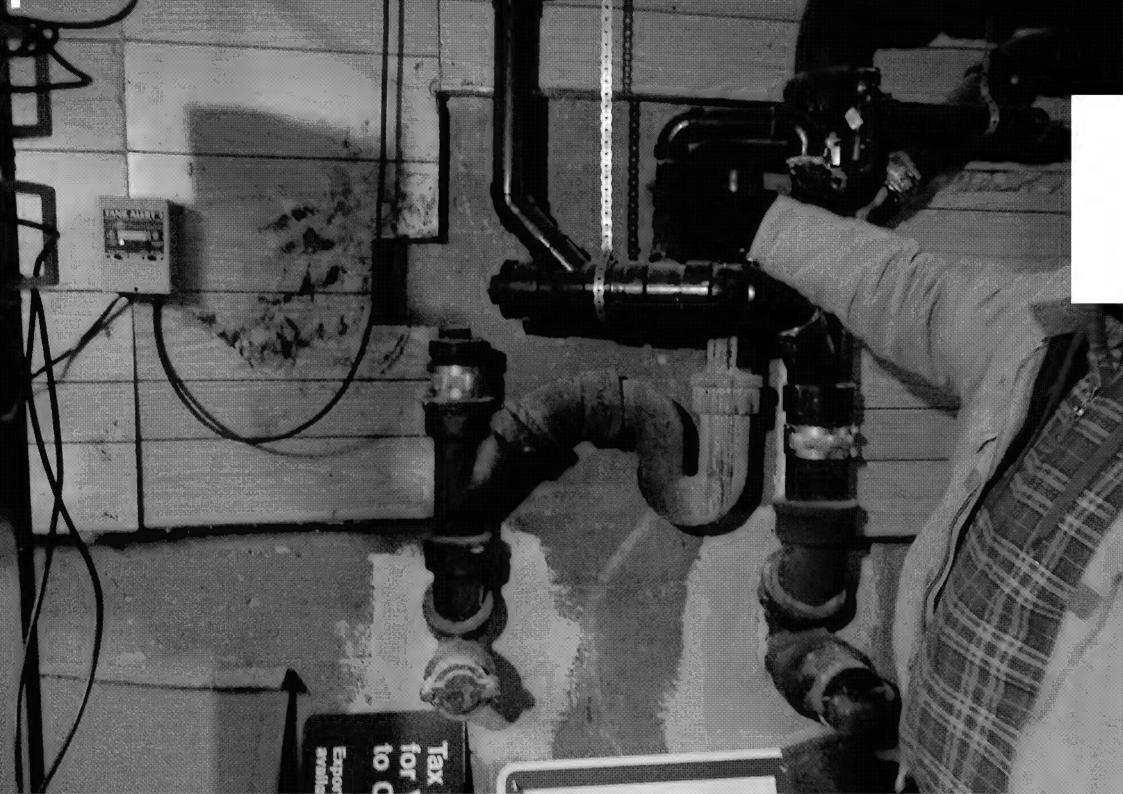
















































## Wild Horse Border Crossing Facility 124 files

Filename	Size (	Image Type	Date	Caption
DSC00077.	343 KB	JPEG	2012-10-26	View S at International Border Markers on S side of roadway
DSC00078.	339 KB	JPEG	2012-11-07	View N along W side of property
DSC00079.	358 KB	JPEG	2012-11-07	View E along S side of property
DSC00080.	110 KB	JPEG	2012-11-07	Panormamic view N to E from SW corner of property
DSC00081.	100 KB	JPEG	2012-11-07	Panormamic view E to SW at adjacent properties from SW corner of property
DSC00083.	86 KB	JPEG	2012-11-07	Panormamic view SW to NW at adjacent properties from SW corner of property
DSC00084.	216 KB	JPEG	2012-11-07	View W at current (foreground) and former (background) groundwater supply wells located NE of port building
DSC00085.	190 KB	JPEG	2012-11-07	View SW at current (foreground) and former (background) groundwater supply wells located NE of port building
DSC00086.	336 KB	JPEG	2012-11-07	View N along E side of property
DSC00087.	249 KB	JPEG	2012-11-07	View W along S side of property
DSC00088.	301 KB	JPEG	2012-11-07	Signage on SE corner of property
DSC00089.	149 KB	JPEG	2012-11-07	Panoramic view N to SE at adjacent properties from SE corner of property
DSC00090.	117 KB	JPEG	2012-11-07	Panoramic view SE to W at adjacent properties from SE corner of property
DSC00091.	178 KB	JPEG	2012-11-07	View S at RCMP communication tower on SE area of the property
DSC00092.	269 KB	JPEG	2012-11-07	View SE at US border crossing facility
DSC00093.	359 KB	JPEG	2012-11-07	View N at sewage discharge mound located on NE area of property
DSC00094.	241 KB	JPEG	2012-11-07	View W at sewage discharge mound located on NE area of property
DSC00095.	119 KB	JPEG	2012-11-07	Panoramic view S to W from NE corner of property
DSC00096.	139 KB	JPEG	2012-11-07	Panoramic view N to SE from NE corner of property
DSC00097.	315 KB	JPEG	2012-11-07	View NE at sewage discharge mound located on NE area of property
DSC00098.	350 KB	JPEG	2012-11-07	Monitoring well located in central septic discharge area
DSC00099.	337 KB	JPEG	2012-11-07	View S at monitoring well located in central septic discharge area
DSC00100.	295 KB	JPEG	2012-11-07	Monitoring well located in central septic discharge area
DSC00101.	381 KB	JPEG		View S at sewage discharge mound located N of central house
DSC00102.	328 KB	JPEG		View W at sewage discharge mound located N of central house
DSC00103.	472 KB	JPEG	2012-11-07	View of rodent burrow at sewage discharge mound located N of central house
DSC00104.	431 KB	JPEG		View SE at electrical box/switch mounted on pole on SW corner of property
DSC00105.	279 KB	JPEG		View NW along fenceline on SW side of property
DSC00106.	333 KB	JPEG	2012-11-07	View ENE at communication pedistal on W fenceline
DSC00107.		JPEG		View N along W side of property
DSC00108.		JPEG		View SW along SW side of property
DSC00109.		JPEG		Panoramic view W to N from SW corner of property
DSC00110.	429 KB	JPEG	2012-11-07	View W at gas line pipeline signage located on NW corner of property

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DSC00111. 438 KB	JPEG	2012-11-07 View S along W side of property
DSC00112. 329 KB	JPEG	2012-11-07 View E along N side of property
DSC00113. 123 KB	JPEG	2012-11-07 Panoramic view N to E from NW corner of property
DSC00115. 298 KB	JPEG	2012-11-07 Peace marker located on S side of roadway S of property
DSC00116. 402 KB	JPEG	2012-11-07 View SE at peace marker on S side of raodway S of property
DSC00117. 286 KB	JPEG	2012-11-07 View S at peace marker on S side of raodway S of property
DSC00118. 276 KB	JPEG	2012-11-07 View NW at W house on SW corner of property
DSC00119. 289 KB	JPEG	2012-11-07 Former AST fill pipe located on SE corner of W house
DSC00120. 340 KB	JPEG	2012-11-07 Suspected former well location on E side of W house
DSC00121. 319 KB	JPEG	2012-11-07 Utility connections on E side of W house
DSC00122. 327 KB	JPEG	2012-11-07 View W at SE corner of W house
DSC00123. 284 KB	JPEG	2012-11-07 View SSW at rear of W house
DSC00124. 220 KB	JPEG	2012-11-07 View S at W house
DSC00125. 251 KB	JPEG	2012-11-07 View S at septic tank located on NW corner of W house
DSC00126. 270 KB	JPEG	2012-11-07 View SE at rear of W house
DSC00127. 405 KB	JPEG	2012-11-07 View E at NW corner of W house
DSC00128. 292 KB	JPEG	2012-11-07 View NE at SW corner of W house
DSC00129. 331 KB	JPEG	2012-11-07 View N at front of W house
DSC00130. 235 KB	JPEG	2012-11-07 View N at double garage located NE of W house
DSC00131. 197 KB	JPEG	2012-11-07 View NW at double garage located NE of W house
DSC00132. 202 KB	JPEG	2012-11-07 View SW at double garage located NE of W house
DSC00133. 372 KB	JPEG	2012-11-07 Manufacturers plate on propane tank located N of garage on E house
DSC00134. 235 KB	JPEG	2012-11-07 View SW at propane tank located N of garage on E house
DSC00135. 232 KB	JPEG	2012-11-07 View SE at propane tank located N of garage on E house
DSC00136. 296 KB	JPEG	2012-11-07 View E at propane tank located N of garage on E house
DSC00137. 254 KB	JPEG	2012-11-07 View of former AST connections located in SE corner of basement area of W house
DSC00138. 259 KB	JPEG	2012-11-07 View SSE at former AST connections located in SE corner of basement area of W house
DSC00139. 270 KB	JPEG	2012-11-07 Basement sump located in NW corner of W house. Note former discharge piping terminations on wall
DSC00140. 253 KB	JPEG	2012-11-07 View ENE at water connnection on NE corner of basement of W house
DSC00141. 302 KB	JPEG	2012-11-07 View N at sewage discharge piping in NW basement area of house
DSC00144. 349 KB	JPEG	2012-11-07 View ESE at septic tank on N side of E house
DSC00145. 218 KB	JPEG	2012-11-07 Septic tank enclosure on N side of E house
DSC00147. 198 KB	JPEG	2012-11-07 Well and former jet pump location in basement room on NW corner of E house
DSC00148. 204 KB	JPEG	2012-11-07 Former pressure tank in basement pump room on NW corner of E house
DSC00149. 305 KB	JPEG	2012-11-07 Former and current water piping on NE corner of basement in E house
DSC00150. 477 KB	JPEG	2012-11-07 View NE at E house
DSC00151. 371 KB	JPEG	2012-11-07 View E at W side of E house. Note well/pump room under concrete pad on left
DSC00152. 312 KB	JPEG	2012-11-07 View SE at E house

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DSC00153. 242 KB	JPEG	2012-11-07 View S at rear of E house. Septic tank in foreground
DSC00154. 373 KB	JPEG	2012-11-07 View SW at rear of E house
DSC00155. 358 KB	JPEG	2012-11-07 View W at E side of E house
DSC00156. 341 KB	JPEG	2012-11-07 View WNW at E house
DSC00157. 345 KB	JPEG	2012-11-07 View NW at front of E house
DSC00158. 337 KB	JPEG	2012-11-07 Wiring at groundwater supply well located NE of port building
DSC00159. 575 KB	JPEG	2012-11-07 View inside casing of groundwater supply well
DSC00160. 352 KB	JPEG	2012-11-07 View inside former well located NE of port building
DSC00161. 320 KB	JPEG	2012-11-07 View of former well located NE of port building
DSC00162. 280 KB	JPEG	2012-11-07 Base of groundwater supply well and cover
DSC00163. 200 KB	JPEG	2012-11-07 View SSE at power supply pole located S of roadway
DSC00164. 243 KB	JPEG	2012-11-07 Wood box located S of roadway
DSC00165. 303 KB	JPEG	2012-11-07 View NE at port building from across roadway
DSC00166. 341 KB	JPEG	2012-11-07 View N at sewage discharge mound located N of port building
DSC00167. 456 KB	JPEG	2012-11-07 View E at sewage discharge mound located N of port building. Note ponding on surface
DSC00168. 435 KB	JPEG	2012-11-07 View S at sewage discharge mound located N of port building
DSC00169. 370 KB	JPEG	2012-11-07 View S at groundwater monitoring well located SE of sewage discharge area
DSC00170. 366 KB	JPEG	2012-11-07 View S at groundwater monitoring well located E central of sewage discharge area
DSC00171. 354 KB	JPEG	2012-11-07 View S at groundwater monitoring well located in central sewage discharge area
DSC00172. 273 KB	JPEG	2012-11-07 View E along N side of sewage discharge area from NW corner of property
DSC00173. 266 KB	JPEG	2012-11-07 View SE across sewage discharge area from NW corner of property
DSC00174. 106 KB	JPEG	2012-11-07 Panoramic view E to S across sewage discharge area from NW corner of property
DSC00175. 329 KB	JPEG	2012-11-07 View W at breezeway on S side of port building
DSC00176. 215 KB	JPEG	2012-11-07 View W at port building
DSC00177. 223 KB	JPEG	2012-11-07 View W at signage on E side of port building
DSC00178. 302 KB	JPEG	2012-11-07 View SW at RCMP communication tower located NE of port building
DSC00179. 243 KB	JPEG	2012-11-07 View SW at port building
DSC00180. 184 KB	JPEG	2012-11-07 View S at burn barrel on N side of port building
DSC00181. 255 KB	JPEG	2012-11-07 View SSW at septic tank covers on N side of port building
DSC00182. 291 KB	JPEG	2012-11-07 View SE at rear of port building
DSC00183. 253 KB	JPEG	2012-11-07 View SE at utilities on W side of port building
DSC00184. 513 KB	JPEG	2012-11-07 View W at wood shed on NW corner of port building
DSC00185. 503 KB	JPEG	2012-11-07 View N at wood shed on NW corner of port building
DSC00186. 249 KB	JPEG	2012-11-07 View E at W side of port building
DSC00187. 342 KB	JPEG	2012-11-07 View NE at port building
DSC00188. 327 KB	JPEG	2012-11-07 Fomer gas connections on NW corner of port building
DSC00189. 329 KB	JPEG	2012-11-07 Plate on AC unit on N side of port building
DSC00190. 355 KB	JPEG	2012-11-07 View E at septic tank covers located N of port building

ASEC - Divulgation en vertu de la loi sur l'Accès à l'in

DSC00191. 328 KB	JPEG	2012-11-07 View S at furnace in basement of port building
DSC00192. 221 KB	JPEG	2012-11-07 View NW at former AST connections in NW corner of basement of port building
DSC00193. 320 KB	JPEG	2012-11-07 Electrical and backup power controls on W side of basement in port building
DSC00194. 290 KB	JPEG	2012-11-07 Plumbing connections on N side of basement in port building
DSC00195. 286 KB	JPEG	2012-11-07 Natural gas piping on basement furnace in port building
DSC00196. 286 KB	JPEG	2012-11-07 UV lamp on water treatment system in port building
DSC00197. 227 KB	JPEG	2012-11-07 Sump located in NE corner of basement of port building
DSC00198. 235 KB	JPEG	2012-11-07 Water softening and filtration media on water treatment system in port building
DSC00199. 288 KB	JPEG	2012-11-07 Bottling station set up in basement of port building
DSC00200. 237 KB	JPEG	2012-11-07 View N at former ASTs in NW corner of basement of port building
DSC00201. 290 KB	JPEG	2012-11-07 Former fill/vent pipe connections on W wall in NW corner of basement of port building
DSC00202. 332 KB	JPEG	2012-11-07 Old salt for water softener stored in wood shed NW of port building
DSC00203. 360 KB	JPEG	2012-11-07 Miscellaneous storage in wood shed NW of port building

From: Proudfoot, Hayley
Sent: July 30, 2015 03:45 PM

**To:** Michael, Connie

**Cc:** Bowman, Stephan; Morris, Martine; Proudfoot, Hayley; Stang, Erin: PWGSC / TPSGC; Brownlee, Michael: PWGSC / TPSGC

**Subject:** CBSA Potable Water: Wild Horse

**Attachments:** B561913V1-R2015-07-29_18-21-20_R006.pdf

**Importance:** High

Hi Connie,

The full suite of water sampling results from Wild Horse port of entry have arrived (earlier than expected). Results can be found in the table below and in the Lab Certificate attached.

#### Exceedances:

Total coliforms @ ATCO Trailer Kitchen Sink

Total coliforms @ ATCO Trailer Washroom Right

Total coliforms @ ATCO Trailer Washroom Left

Sodium @ Office Point of Entry

Sodium @ Office Kitchen Sink

Sodium @ ATCO Trailer Kitchen Sink

Sodium @ ATCO Trailer Washroom Right

Sodium @ ATCO Trailer Washroom Left

			WILDHORSE-ATCO	WILDHORSE_ ATCO	WILDHORSE_ ATCO	
Sample Location	WILDHORSE-OFF-POE	WILDHORSE-OFF-KTC	TRAILER-KTC	TRAILER-WASRIGHT	TRAILER-WASLEFT	GCDW
E.Coli DST (mpn/100mL)	<1.0	<1.0	<1.0	<1.0	<1.0	No detectable
Total Coliforms DST (mpn/100mL)	<1.0	<1.0	>2400	>2400	>2400	No detectable
Turbidity (NTU)	0.47	0.2	0.27	0.21	0.21	<1 (OG
Total Hardness (CaCO3)	1.13	1.1	1.05	0.83	1.09	
Total Cadmium (ug/L)	<0.020	<0.020	<0.020	<0.020	<0.020	<5 (MA
Total Aluminum (mg/L)	<0.0030	<0.0030	0.0045	<0.0030	0.004	<0.1 (00

Total Antimony (mg/L)	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.006 (N
Total Arsenic (mg/L)	0.00025	0.00023	<0.00020	0.00021	<0.00020	<0.010 (N
Total Barium (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	<1 (MA
Total Beryllium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Boron (mg/L)	0.72	0.72	0.86	0.72	0.86	<5 (MA
Total Calcium (mg/L)	0.45	0.44	0.42	0.33	0.44	
Total Chromium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.050 (N
Total Cobalt (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Total Copper (mg/L)	0.0025	0.019	0.023	0.021	0.025	<1 (AO
Total Iron (mg/L)	0.071	<0.060	<0.060	<0.060	<0.060	<0.3 (A
Total Lead (mg/L)	0.0011	0.0011	0.0014	0.001	0.0012	<0.010 (N
Total Lithium (mg/L)	0.12	0.12	0.16	0.13	0.15	
Total Magnesium (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20	
Total Manganese(mg/L)	0.0045	0.0042	<0.0040	<0.0040	<0.0040	<0.050 (
Total Molybdenum (mg/L)	0.00027	<0.00020	<0.00020	<0.00020	<0.00020	
Total Nickel (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Total Phosphorus (mg/L)	0.16	0.11	0.15	0.16	0.15	
Total Potassium (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	
Total Selenium (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.050 (N
Total Silicon (mg/L)	2.5	2.5	3	2.6	3	
Total Silver (mg/L)	<0.00010	0.00035	<0.00010	<0.00010	<0.00010	
Total Sodium (mg/L)	1100	1100	1200	920	1200	<200 (A
Total Strontium (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020	
Total Sulphur (mg/L)	<0.20	<0.20	45	38	45	
Total Thallium (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Total Tin (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Titanium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Uranium (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.020 (N
Total Vanadium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Zinc (mg/L)	0.0048	0.028	0.039	0.031	0.04	<5 (AO
Total Mercury (ug/L)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<1 (MA

Summary of Notes from the Consultant:

- Total coliform bacteria is only found in the ATCO trailer distribution, not at the office building, indicating there is a specific issue with this system
- The total coliform bacteria is not found in association with E. coli, indicating that the source of contamination is not likely faecal matter

Summary of Recommendations from the Consultant:

- Ensure Do Not Drink signage is posted at <u>all consumption points</u>, including in the ATCO trailers, washrooms, detention rooms, office building kitchen, office building washroom, etc.
- Ensure staff are using bottled water, or are boiling water for one minute, for consumption and food preparation
- A flush and superchlorination of the system, including the ATCO trailer, should be done as soon as possible
- Follow up sampling should occur after the flush and superchlorination to determine if the total coliform bacteria has been removed from the system

Guidelines for activities which can and should not be performed during this type of advisory can be found on Health Canada's webpage:

(EN) <a href="http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/boil-ebullition-eng.php">http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/boil-ebullition-eng.php</a>

(FR) http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/boil-ebullition-fra.php

The consultant's full notes and summary can be found below.

If you have any questions please do not hesitate to ask.

Thank you, Hayley

Hayley Proudfoot

Environmental Analyst | Analyste de l'environnement Environmental Programs Division | Division des programmes environnementaux Canada Border Services Agency | Agence des services frontaliers du Canada 355 North River Road, Tower B, 19th Floor, Room 19025 | 355 chemin North River, tours B, 19e étage, 19025 Ottawa, ON K1A 0L8

Telephone: (343) 291-5834 Blackberry: (613) 866-7144

Email: Hayley. Proud foot@cbsa-asfc.gc. ca

From: Robert Till [mailto: @slrconsulting.com]

**Sent:** July 30, 2015 3:29 PM **To:** Proudfoot, Hayley

Cc: Stang, Erin: PWGSC / TPSGC; Brownlee, Michael: PWGSC / TPSGC; Gariano, Anthony: PWGSC / TPSGC

Subject: July 2015 CBSA Wild Horse Potable Water Sampling - Total Coliform Maximum Allowable Concentration and Aesthetic Objective Exceedences

#### Hi Hayley,

Complete analytical results for the July 2015 monitoring round at Wild Horse border crossing came in on Wednesday 29th July (attached) and indicated that Total Coliform concentrations exceeded their maximum allowable concentration (MAC) in all of the ATCO trailer distribution points (WILDHORSE-ATCO TRAILER-KTC, WILDHORSE_ ATCO TRAILER-WASRIGHT and WILDHORSE_ ATCO TRAILER-WASLEFT). As the Total Coliform concentrations were indicated to be so high, they were checked with the laboratory and confirmed to be accurate. All samples exceeded their aesthetic objectives (AO) for sodium. The results were as follows with the exceedances (if present) highlighted in red:

Sample Location	WILDHORSE-OFF-POE	WILDHORSE-OFF-KTC	WILDHORSE-ATCO TRAILER-KTC	WILDHORSE_ ATCO TRAILER-WASRIGHT	WILDHORSE_ATCO TRAILER-WASLEFT	GCDW
E.Coli DST (mpn/100mL)	<1.0	<1.0	<1.0	<1.0	<1.0	No detectable
Total Coliforms DST (mpn/100mL)	<1.0	<1.0	>2400	>2400	>2400	No detectable
Turbidity (NTU)	0.47	0.2	0.27	0.21	0.21	<1 (OG
Total Hardness (CaCO3)	1.13	1.1	1.05	0.83	1.09	
Total Cadmium (ug/L)	<0.020	<0.020	<0.020	<0.020	<0.020	<5 (MA
Total Aluminum (mg/L)	<0.0030	<0.0030	0.0045	<0.0030	0.004	<0.1 (O
Total Antimony (mg/L)	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.006 (N
Total Arsenic (mg/L)	0.00025	0.00023	<0.00020	0.00021	<0.00020	<0.010 (N
Total Barium (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010	<1 (MA
Total Beryllium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Boron (mg/L)	0.72	0.72	0.86	0.72	0.86	<5 (MA
Total Calcium (mg/L)	0.45	0.44	0.42	0.33	0.44	
Total Chromium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.050 (N
Total Cobalt (mg/L)	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	
Total Copper (mg/L)	0.0025	0.019	0.023	0.021	0.025	<1 (AC
Total Iron (mg/L)	0.071	<0.060	<0.060	<0.060	<0.060	<0.3 (A
Total Lead (mg/L)	0.0011	0.0011	0.0014	0.001	0.0012	<0.010 (N
Total Lithium (mg/L)	0.12	0.12	0.16	0.13	0.15	
Total Magnesium (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20	
Total Manganese(mg/L)	0.0045	0.0042	<0.0040	<0.0040	<0.0040	<0.050 (/
Total Molybdenum (mg/L)	0.00027	<0.00020	<0.00020	<0.00020	<0.00020	
Total Nickel (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Total Phosphorus (mg/L)	0.16	0.11	0.15	0.16	0.15	

Total Potassium (mg/L)	<0.30	<0.30	<0.30	<0.30	<0.30	
Total Selenium (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.050 (N
Total Silicon (mg/L)	2.5	2.5	3	2.6	3	
Total Silver (mg/L)	<0.00010	0.00035	<0.00010	<0.00010	<0.00010	
Total Sodium (mg/L)	1100	1100	1200	920	1200	<200 (A
Total Strontium (mg/L)	<0.020	<0.020	<0.020	<0.020	<0.020	
Total Sulphur (mg/L)	<0.20	<0.20	45	38	45	
Total Thallium (mg/L)	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Total Tin (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Titanium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Uranium (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.020 (N
Total Vanadium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Zinc (mg/L)	0.0048	0.028	0.039	0.031	0.04	<5 (AO
Total Mercury (ug/L)	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<1 (MA

The MAC exceedances of Total Coliforms are found in the ATCO trailer distribution points but are not seen in the office distribution system, and are not associated with detections of E. Coli. The fact that Total Coliforms were detected without the presence of E.Coli suggests that the cause may not be faecal contamination, however the fact that the issue is isolated to the ATCO trailer indicates that there is a specific issue with the distribution system in this facility.

The field notes indicate that a "Do not Drink" advisory is currently only posted in the office washroom at the site, therefore signage should be deployed immediately at all distribution points (including any public washrooms, water sources in detention rooms and especially in the ATCO Trailer) and site staff informed. It was indicated that bottled water is currently being used for drinking and food preparation. As the Total Coliforms detected are above 10 per 100mL, flushing and superchlorination of the system, including the ATCO trailer should be undertaken as soon as possible. Once this has been completed, follow up samples should be taken to confirm the lack of Total Coliforms at the point of entry and points of use. If the problem persists, the source of the contamination should be investigated further. Please let me know if you want us to resample the site for you prior to the scheduled October sampling and I will provide an estimate of costs for undertaking the sampling, as this would be additional work above the cost estimate provided initially.

The exceedence of aesthetic objectives do not pose a health risk to site personnel, however they may affect the taste and odour of the water at the site which may prevent personnel consuming the water. It was indicated that bottled water is currently being used for drinking and food preparation at the site. As a "Do Not Drink" advisory is to be issued, it is considered unnecessary at this time to issue warnings regarding the high sodium content of the water.

Kind regards,

Robert

#### Robert Till, M.Sc., P.Geo, FGS

Senior Hydrogeologist SLR Consulting (Canada) Ltd.

Cell:

Office: 780-490-7893 Fax: 780-490-7819

Email: @slrconsulting.com

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#### www.slrconsulting.com



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From: Patten, Brent

**Sent:** August 21, 2015 06:29 PM

To: Hewson, Kevin

Cc: Michael, Connie; Vanrobaeys, Michelle; Patel, Nina

**Subject:** FW: Brookfield concern - Northgate POE

Here is the update from PWGSC for Wildhorse and Northgate

Connie – great work today fighting this for Kevin and then making the right decision to go outside of BGIS to find a short term fix for Wildhorse. I have told PWGSC that I back this decision and have support from them on this.

From: Kelli Hayhurst [mailto:Kelli.Hayhurst@pwgsc-tpsgc.gc.ca]

**Sent:** August 21, 2015 5:24 PM

To: Patten, Brent

**Subject:** RE: Brookfield concern - Northgate POE

Latest update I have from BGIS:

#### 1. Wildhorse:

- The temporary 15 gallon tank located on site with adequate water levels to service the location. This is being checked on a regular basis.
- Funding approval was provided by CBSA with a proviso that a Steve Singer provides his input into the BGIS approach before we take action. Given the urgency, waiting until all questions and answers are given back to Mr. Singer I have instructed Walter to issue an emergency WO to the vendor so that the vendor can purchase the material required to complete the task.
- A tank has been ordered and will be shipped to site from Medicine Hat. We will update on timing of arrival once known
- All other materials & supplies required are being purchased this weekend.
- We will advise when we have confirmation for contractor arrival on site and the duration need to complete work.

#### 2. Northgate:

- We cannot reach current vendor.
- We have made arrangements with another vendor to attend to the site, however they cannot attend until Monday morning. We are working to see if we can have attend on Saturday or Sunday. We will keep you posted on this as well.

#### Kelli Hayhurst

Client Service Director, Western Region
Public Works and Government Services Canada / Government of Canada kelli.hayhurst@pwgsc-tpsgc.gc.ca / Tel: 204-891-0729

Directrice, Service à la clientèle, Région de l'ouest Travaux publics et Services gouvernementaux Canada / Gouvernement du Canada kelli.hayhurst@tpsgc-pwgsc.gc.ca / Tél.: 204-891-0729

From: Patten, Brent [mailto:Brent.Patten@cbsa-asfc.gc.ca]

**Sent:** August-21-15 5:14 PM

To: Kelli Hayhurst

**Subject:** FW: Brookfield concern - Northgate POE

Importance: High

Hi Kelli

More issues...

From: Hewson, Kevin

**Sent:** August 21, 2015 12:37 PM **To:** Patten, Brent; Patel, Nina

**Subject:** FW: Brookfield concern - Northgate POE

Importance: High

More BGIS issues.....

From: Kienlen, Scott

**Sent:** August 21, 2015 11:31 AM

To: Hewson, Kevin

**Subject:** FW: Brookfield concern - Northgate POE

Importance: High

From: Michael, Connie

**Sent:** August 21, 2015 11:29 AM **To:** Jacobs, Sheldon: PWGSC / TPSGC

Cc: Kienlen, Scott; Mayer, John: PWGSC / TPSGC; Simonson, Lyle

**Subject:** FW: Brookfield concern - Northgate POE

Importance: High

Sheldon – Who do I need to escalate this situation to. This is unacceptable for our Border Services Officers to take on the work that BGIS was to do.

Please keep me and Scott informed of the course of action.

Connie Michael

Manager of Infrastructure, Operations Branch
Canada Border Services Agency / Government of Canada
Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

From: Kienlen, Scott

**Sent:** August 21, 2015 12:23 PM

**To:** Michael, Connie **Cc:** Hewson, Kevin

Subject: Brookfield concern - Northgate POE

Importance: High

Hi Connie,

I had call from one of the BSO's at Northgate, SK POE this morning. The office has not been cleaned in over a week and they had run-out of toilet paper and paper towel. I have since taken a case of toilet paper and so on from North Portal to Northgate. The staff have also removed the garbage from the containers however are now out of garbage bags. The staff at Northgate stated they heard that Brookfield and the cleaner under contact are having a contract dispute thus why the cleaner has not attended as of late. The cleaner is to be there three days per week.

I have called the National Service Call Center and put in an urgent request for service for office cleaning and the supply of paper products. Ticket # 4352561.

#### Scott Kienlen

From: Michael, Connie

**Sent:** August 11, 2016 07:53 AM

To: ABRAHAM, GILLES

Candice Oremba (Candice.Oremba@pwgsc-tpsgc.gc.ca); Sheldon Jacobs

(Sheldon.Jacobs@tpsqc-pwqsc.qc.ca); Beauchamp, FrancineJ; Drisdelle, Rachel

**Subject:** FW: CBSA Program of Projects - SSA

**Attachments:** Wildhorse - SSA - R.077747.047 - Well Installation.pdf

Good morning Gilles – The Wildhorse SSA has been approved and signed off by HQ. You will need to create a Funds Commitment to generate the IS Ref code that Sheldon needs. You have approval to create the funds commitment.

The other SSA I have sent off to HQ to approve.

Let me know if you require anything further.

Thanks,

Connie

**From:** Sheldon Jacobs [mailto:Sheldon.Jacobs@tpsgc-pwgsc.gc.ca]

**Sent:** August 10, 2016 4:22 PM

To: Michael, Connie; ABRAHAM, GILLES

Cc: Candice Oremba

Subject: RE: CBSA Program of Projects - SSA

Good afternoon,

With regard to the RP1 Program of Projects.

Please find attached above an amended SSA to incorporate the four water treatment systems in the current SSA.

I have attached the approved original for your convenience.

Kindly confirm IS ORG code and provide the IS REF code.

Kindly have the SSA signed and dated and a copy returned to me.

# Thank you,

# **Sheldon Jacobs**

Property & Facility Manager
CBSA & CBSA RP1 Portfolio
Real Property Services
Public Works and Government Services Canada
Suite 110, 101 - 22nd Street East
Saskatoon, Saskatchewan S7K 0E1

T: (306)975-6936 F: (306)975-5397 C:(306)716-0351

From: Michael, Connie [mailto:Connie.Michael@cbsa-asfc.gc.ca]

**Sent:** August-10-16 6:04 AM

**To:** Beauchamp, FrancineJ < <u>FrancineJ.Beauchamp@cbsa-asfc.gc.ca</u>>

Cc: ABRAHAM, GILLES <GILLES.ABRAHAM@cbsa-asfc.gc.ca>; Sheldon Jacobs <Sheldon.Jacobs@tpsgc-

Public Works and
Government Services Canada

Travaux publics et
Services gouvernementaux
Canada

# SPECIFIC SERVICE AGREEMENT - REAL PROPERTY BRANCH CONVENTION PARTICULIÈRE DE SERVICES - BIENS IMMOBILIERS

CUSTOMER - (1   Customer (Department, agency - Ministère,	Customer no N° de client	8	PROVIDER - FOI		R DE SERVICES [10] Project no N° du projet		
Ganada Border Services Agency	1085	▼ Original	Amendment Modification	Na. N°	R.077747.047		
money and many many and a summy a single sorth	Customer department no. N° de ministère du client	Date	Date	**	Level - Niveau		
		2016-07-25			1		
Customer contact - Représentant du client	Tel. no. ∞ N° de tél.	Project manager - Gestionnaire de projet			Tel. no N° de tél.		
Lyle Simonson	(306) 780-8372 []	Sheidon Jacobs			[ (306) 975-6936 []		
2 Billing attention - Envol de facture à l'attention Gilles Abraham	de Tel. no N° de tél. (204) 983-4403 [ ]	Senior Project Manager Kelsey Fredrickser		oal de projet	Tel. no N° de têl. (204) 983-5849 [ 1		
Billing address - Adresse de facturation	[(204) 303-4403 [	Address - Adresse			[ \ZV4\) 303-3043 []		
100 - 269 Main Street Winnipeg, Manitoba R3C 1B3	167 Lombard Avenue Winnipeg, MB R3B 0T6						
Billing Email - Courriel de facturation	2530-7-60-00		Customer service unit - Équipe services clients				
Gilles.Abraham@cbsa-asfc.gc.ca  3   Customer reference no.(for invoice) - N° de réfe		Kelii Hayhurst	a mond	Danina Dá	2 [ 2 2		
C-00034-20-		Reporting Area - Domaine rapport Region - Région - Région - Western					
4 IS/IT ORG / ORG RI/TI 5 IS/IT RE	F/REFRI/TI	121 Program of Work		3 Fee optio	Western		
**************************************	2 5 L/FT L/1 5 11	Programme des trava			its l'honoraires		
3910		✓ Yes - Oui	Yes - Oui No - Non		based fee plus disb		
6 Project title and location - Titre et lieu du projet			1	4 Start date	ı - Dale de début		
2016/2017 AIP3, Minor Capital Well Installal CBSA Port of Wild Horse	ion Project				2016-07-15		
600/ 34210	450.	2016-07-26		Completic	Nion date - Parachèvement		
76 Z Z S  15 Services required - Services requis	See attached page - Volr page cl-jointe	*			2017-03-31		
7 AGREED FUNDING - FINANCEMENT (	CONVENU	PWGSC. PWGSC Labour: AS	603, 5.25 hrs = \$	500.00			
Year Année	PVVGGC LBDGUI PRP 420	WGSC Disbursements PRP 400 RP 400 Debours TPSGC	PWGSC Fees P PRP 410 Honoraire	RP 410 s TPSGC	TOTAL		
Previous years Années précédentes							
Current year Année courante 2016 / 2017	500.00	49,500.00			50,000.00		
Current year + 1 Année courante + 1							
Current year + 2 Année courante + 2		6	****				
Future years Années futures /					***************************************		
TOTAL	500.00	49,500.00			50,000.00		
ACCEPTANCE BY CUSTOMER - ACC		SERVICE PROVIDER AP	PROVAL - APPROB	ATION DU F	OURNISSEUR DE SERVICES		
Tambrae Knapp	Tel. no N° de tél.	18 Name - Nom Maria Durnitrescu		1	Tel. no N° de tél. (780) 497-3876 []		
Executive Directile	Fax. no N° de télécopleur	Title - Titre Technical Anthority,	863/		Fax. no N° de télécopleur (780) 497-3562		
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PWGSC INTERNAL USE ONLY - USAGE IN	ITERNIZ DE TPSGC SEULEMEN				<u> </u>		
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From: ABRAHAM, GILLES
Sent: July 26, 2016 11:18 AM

To: Michael, Connie

**Subject:** FW: CBSA RP1 Projects - Wildhorse well

Hey – do you know where the business case for the well could be saved? Was a business case written or was it just put on the capital projects list?

The only thing I have found so far is the Statement of Work for BGIS

From: Leyton, Ana Maria Sent: July 26, 2016 9:33 AM To: ABRAHAM, GILLES Cc: Elborn, Edward (Ted)

Subject: FW: CBSA RP1 Projects - Wildhorse well

Gilles

I found the SSA but I need a copy of the SOR/Business Case for the Wildhorse well project. Can you please provide?

Thank you

Ana Maria

From: Leyton, Ana Maria

**Sent:** Tuesday, July 26, 2016 10:21 AM **To:** ABRAHAM, GILLES; Michael, Connie

Cc: Knapp, Tambrae; Marsden, Kelly; Ted Elborn (<u>Ted.Elborn@cbsa-asfc.gc.ca</u>); Desmarais, Sylvie

Subject: RE: CBSA RP1 Projects - Wildhorse well

Yes, both the Wildhorse – new well project as well as the Prairie Region Water Treatment System Upgrades projects (at Coronach, Monchy, Willow Creek and West Poplar River) were approved by RPIB under the AIP3.

For all to note: the AIP3 is the <u>only</u> source of capital funding this year for small capital projects. Any SSAs, inquiries, etc. pertaining to capital funding should be directed to me or Ted please.

Answers below (in red):

- Will both projects be AIP3, Capital funded? If not, please advise funding. YES
- Do you know who will be signing the SSA's or do you prefer that the name/contact info be left blank? Tambrae Knapp (Executive Director, IEOD)

Please provide myself / Ted with the SSAs so that we can process and seek signature at our end

Thank you

Ana Maria

From: ABRAHAM, GILLES

**Sent:** Tuesday, July 26, 2016 9:27 AM

To: Michael, Connie

**Cc:** Leyton, Ana Maria; Knapp, Tambrae; Marsden, Kelly **Subject:** RE: CBSA RP1 Projects - Wildhorse well

Hi Connie – the project was approved and is on the list.

Thanks,

Gilles Abraham

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region Canada Border Services Agency / Government of Canada

Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des prairies Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

From: Michael, Connie Sent: July 26, 2016 8:26 AM To: ABRAHAM, GILLES

**Cc:** Leyton, Ana Maria; Knapp, Tambrae; Marsden, Kelly **Subject:** FW: CBSA RP1 Projects - Wildhorse well

Good morning Gilles – Has this project been approved by RPIB?

I have cc'd the HQ Management team to see if they can verify that this project is approved by HQ. The project estimate is \$50K and indicated below as an AIP project.

Once I have confirmation that the project is approved for 16/17, I will obtain coding and signature for the attached SSA.

Thanks,

Connie

From: ABRAHAM, GILLES Sent: July 26, 2016 9:12 AM

To: Michael, Connie

Subject: FW: CBSA RP1 Projects - Wildhorse well

Hey Connie – should I forward this to Kelly or Ana Maria?

Thanks,

Gilles Abraham

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region Canada Border Services Agency / Government of Canada

Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des prairies Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

**From:** Sheldon Jacobs [mailto:Sheldon.Jacobs@tpsqc-pwqsc.gc.ca]

**Sent:** July 25, 2016 5:02 PM **To:** ABRAHAM, GILLES

Cc: Candice Oremba; Fredricksen, Kelsey: PWGSC / TPSGC

Subject: RE: CBSA RP1 Projects - Wildhorse well

Good afternoon.

With regard to the well installation at the Port of Wildhorse.

Please find attached above the SSA in the amount of the funding provided by CBSA.

Kindly review and provide the necessary information needed in boxes 3, 4, 5 & 8.

Once information has been completed, kindly return a signed copy to me.

Any questions or concerns, please contact me.

#### Thank you,

Sheldon Jacobs
Property & Facility Manager
CBSA & CBSA RP1 Portfolio
Real Property Services
Public Works and Government Services Canada
Suite 110, 101 - 22nd Street East
Saskatoon, Saskatchewan S7K 0E1

T: (306)975-6936 F: (306)975-5397 C:(306)716-0351

From: ABRAHAM, GILLES [mailto:GILLES.ABRAHAM@cbsa-asfc.gc.ca]

Sent: July-25-16 12:44 PM

**To:** Candice Oremba < <u>Candice.Oremba@pwgsc-tpsgc.gc.ca</u>> **Cc:** Sheldon Jacobs < <u>Sheldon.Jacobs@tpsgc-pwgsc.gc.ca</u>>

Subject: FW: CBSA RP1 Projects

Hi Candace – see response from HQ Infrastructure below

Thanks, Gilles Abraham

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region Canada Border Services Agency / Government of Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des

Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

From: Michael, Connie Sent: July 25, 2016 1:20 PM To: ABRAHAM, GILLES

**Subject:** FW: CBSA RP1 Projects

Hi Gilles – These are on Ana Maria's list. Waiting for approval I believe.

From: Michael, Connie

**Sent:** July 25, 2016 12:39 PM

**To:** Marsden, Kelly **Cc:** ABRAHAM, GILLES

Subject: FW: CBSA RP1 Projects

Hi Kelly – Are you aware of this project for the POEs of Coronach, Monchy, Willow Creek and West Poplar River? Does Anna Marie have these on her list of projects for AIP?

Thanks Kelly.

Connie

From: ABRAHAM, GILLES Sent: July 25, 2016 12:36 PM

**To:** Michael, Connie

**Subject:** FW: CBSA RP1 Projects

As discussed – see below for additional information

Thanks, Gilles Abraham

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region Canada Border Services Agency / Government of Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des prairies

Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

**From:** Candice Oremba [mailto:Candice.Oremba@pwgsc-tpsgc.gc.ca]

**Sent:** July 21, 2016 2:53 PM **To:** ABRAHAM, GILLES

Cc: Simonson, Lyle; Sheldon Jacobs; Fredricksen, Kelsey: PWGSC / TPSGC

Subject: CBSA RP1 Projects

Hello Gilles,

Thanks again for taking the time to join us this morning. It was really nice to have a chance to chat!

We would like to get SSA's completed for the Wild Horse (new well) and the Prairie Region Water Treatment System Upgrades (Coronach, Monchy, Willow Creek, West Poplar River) projects and I just need to confirm a couple details:

- Will both projects be AIP3, Capital funded? If not, please advise funding.
- Do you know who will be signing the SSA's or do you prefer that the name/contact info be left blank?

As per the CBSA POW spreadsheet and discussion at the CBSA/BGIS/PWGSC project meeting, the Wild Horse SSA will be \$50,000 for 2016/17. The Prairie Region Water Treatment System Upgrades will be \$80,000 for 2016/17, for plans & specs (\$20,000 per port), with the remaining \$140,000 for construction in 2017/18.

Sheldon will be back in the office tomorrow, so if you are able to get back to us then he'll get the SSA's completed and sent off to you for signatures tomorrow. If you have any questions at all, please let us know.

Thank you!

#### **Candice Oremba**

Property and Facility Officer, Real Property Services
Public Works and Government Services Canada / Government of Canada
1800 - 11th Avenue, Suite 201, Regina, SK S4P 0H8
Email: <a href="mailto:candice.oremba@pwgsc-tpsgc.gc.ca">candice.oremba@pwgsc-tpsgc.gc.ca</a> / Tel: 306-780-5507 / Cell: 306-201-9501

From: ABRAHAM, GILLES

**Sent:** March 16, 2017 03:26 PM

To: Michael, Connie Cc: Wozny, Brad

**Subject:** FW: Contractors - Wildhorse

FYI – water system chlorination and pest control are being taken care of.

Thanks,

Gilles Abraham, C.I.M.; C.Mgr

A/Manager of Infrastructure, Corporate and Program Services Division, Prairie Region Canada Border Services Agency / Government of Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tel: 204-983-4403 / TTY: 866-335-3237

Gestionnaire intérimaire de l'infrastructure, Division des services intégrés et des programmes, Région des prairies Agence des services frontaliers du Canada / Gouvernement du Canada Gilles.Abraham@cbsa-asfc.gc.ca / Tél: 204-983-4403 / ATS: 866-335-3237

From: Anderson, Darryl Sent: March 16, 2017 2:21 PM

To: Singer, Steve <Steve.Singer@cbsa-asfc.gc.ca>; Simonson, Lyle <Lyle.Simonson@cbsa-asfc.gc.ca>; ABRAHAM,

GILLES < GILLES.ABRAHAM@cbsa-asfc.gc.ca> **Cc:** Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca>

**Subject:** RE: Contractors

Hi all.

Just spoke to Matt from Brookfield. He advised he called the regular plumbing company to walk him through what needs to be done to for the water system. He is going to put out some mice stuff as well.

He has advised our regular contractors will be back out taking care of business from this point on including our regular pest guy which is a relief. I guess we will wait and see.

So fire is out temporarily..... fyi D

From: Singer, Steve

Sent: March 16, 2017 10:51 AM

To: Simonson, Lyle < Lyle.Simonson@cbsa-asfc.gc.ca >; ABRAHAM, GILLES < GILLES.ABRAHAM@cbsa-asfc.gc.ca >

Cc: Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca >; Anderson, Darryl < Darryl. Anderson@cbsa-asfc.gc.ca >

Subject: RE: Contractors

We'll update you if/ when he arrives ...

From: Simonson, Lyle

Sent: March 16, 2017 10:50 AM

To: Singer, Steve < Steve.Singer@cbsa-asfc.gc.ca >; ABRAHAM, GILLES < GILLES.ABRAHAM@cbsa-asfc.gc.ca >

Cc: Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca >; Anderson, Darryl < Darryl.Anderson@cbsa-asfc.gc.ca >

Subject: RE: Contractors

I just talked to Walter on the phone. He indicated Mathew was going there first thing this morning and scheduled to arrive about 10:30. He will be filling up the chlorine as well as checking the bait traps/putting out poison. Walter also indicated pest control company would be out in the next week or so to do a follow up visit.

Thanks,

Lyle Simonson

Facility Officer / Operations Branch
Canada Border Services Agency
Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations
Agence des services frontaliers du Canada
Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237

From: Singer, Steve

Sent: March 16, 2017 10:45 AM

To: Simonson, Lyle <Lyle.Simonson@cbsa-asfc.gc.ca>; ABRAHAM, GILLES <GILLES.ABRAHAM@cbsa-asfc.gc.ca>

Cc: Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca >; Anderson, Darryl < Darryl.Anderson@cbsa-asfc.gc.ca >

Subject: RE: Contractors

I've been informed we have less than two inches of chlorination treatment in the tank – we're estimating that's a day's worth of water

From: Simonson, Lyle

Sent: March 16, 2017 10:39 AM

To: Singer, Steve < Steve.Singer@cbsa-asfc.gc.ca >; ABRAHAM, GILLES < GILLES.ABRAHAM@cbsa-asfc.gc.ca >

Cc: Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca >; Anderson, Darryl < Darryl.Anderson@cbsa-asfc.gc.ca >

**Subject:** RE: Contractors

I have word from Walter that Mathew is scheduled to be there today. Not sure why they keep changing the dates.

Lyle Simonson

Facility Officer / Operations Branch
Canada Border Services Agency
Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations
Agence des services frontaliers du Canada
<a href="mailto:Lyle.Simonson@cbsa-asfc.gc.ca">Lyle.Simonson@cbsa-asfc.gc.ca</a> / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237

From: Singer, Steve

**Sent:** March 16, 2017 10:35 AM

To: ABRAHAM, GILLES < GILLES.ABRAHAM@cbsa-asfc.gc.ca >; Simonson, Lyle < Lyle.Simonson@cbsa-asfc.gc.ca >

Cc: Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca >; Anderson, Darryl < Darryl. Anderson@cbsa-asfc.gc.ca >

Subject: FW: Contractors

Importance: High

Gilles – do you have a moment for an urgent phone call – I need to take action on this

S

From: Anderson, Darryl

Sent: March 16, 2017 10:33 AM

To: Ziola, Tim < <a href="mailto:Tim.Ziola@cbsa-asfc.gc.ca">Tim.Ziola@cbsa-asfc.gc.ca</a> <a href="mailto:Cc:Singer@cbsa-asfc.gc.ca">Cc:Singer@cbsa-asfc.gc.ca</a>

Subject: RE: Contractors

We have no one on site as of now.... Unfortunately.

From: Ziola, Tim

Sent: March 15, 2017 3:09 PM

**To:** Anderson, Darryl < <u>Darryl.Anderson@cbsa-asfc.gc.ca</u>>

Cc: Singer, Steve <Steve.Singer@cbsa-asfc.gc.ca>

Subject: RE: Contractors

I saw the latest email from Lyle Simonson. If the water contractor hasn't stopped in to service the system by tomorrow morning please let me know and I will escalate it further. Please find out for first thing tomorrow morning and let me know.

Thanks

Tim Ziola

A/Director, Southern Alberta Southern Saskatchewan District, Prairie Region Canada Border Services Agency / Government of Canada <a href="mailto:Tim Ziola@cbsa-asfc.gc.ca">Tim Ziola@cbsa-asfc.gc.ca</a> / <a href="mailto:Tel:403-344-2061">Tel:403-344-2061</a> / Cell:403-604-1283

Directeur intérimaire, District du sud de l'Alberta et sud de la Saskatchewan, Région des prairies Agence des services frontaliers du Canada / Gouvernement du Canada <u>Tim Ziola@cbsa-asfc.gc.ca</u> / <u>Tel:403-344-2061</u> / Cell:403-604-1283

From: Anderson, Darryl

**Sent:** March 15, 2017 3:04 PM

To: Ziola, Tim <Tim.Ziola@cbsa-asfc.gc.ca>

Subject: Re: Contractors

Nothing yet. Water is going to be critical in a few days. Danger of pump burning out and contaminated system

Sent from my BlackBerry 10 smartphone on the Rogers network.

From: Ziola, Tim

**Sent:** Wednesday, March 15, 2017 14:54 **To:** Anderson, Darryl; Singer, Steve

Subject: RE: Contractors

Darryl

Was this for the pest control or the water issue? Has either one been rectified as of yet?

Tim Ziola

A/Director, Southern Alberta Southern Saskatchewan District, Prairie Region Canada Border Services Agency / Government of Canada

### Tim Ziola@cbsa-asfc.gc.ca / Tel:403-344-2061 / Cell:403-604-1283

Directeur intérimaire, District du sud de l'Alberta et sud de la Saskatchewan, Région des prairies Agence des services frontaliers du Canada / Gouvernement du Canada Tim Ziola@cbsa-asfc.gc.ca / Tel:403-344-2061 / Cell:403-604-1283

From: Anderson, Darryl

Sent: March 15, 2017 1:24 PM

**To:** Singer, Steve < Steve.Singer@cbsa-asfc.gc.ca>; Ziola, Tim < Tim.Ziola@cbsa-asfc.gc.ca>; Simonson, Lyle

<Lyle.Simonson@cbsa-asfc.gc.ca>

Subject: Fw: Contractors

Fyi no contractors at Wild Horse yet. D

Sent from my BlackBerry 10 smartphone on the Rogers network.

**From:** Smith, Trevor < Trevor. Smith@cbsa-asfc.qc.ca>

**Sent:** Wednesday, March 15, 2017 13:19

**To:** Anderson, Darryl **Subject:** RE: Contractors

No sir

From: Anderson, Darryl

**Sent:** March 15, 2017 1:16 PM

To: Moritz, Earl < Earl. Moritz@cbsa-asfc.gc.ca >; Smith, Trevor < Trevor. Smith@cbsa-asfc.gc.ca >

**Subject:** Contractors

Any show up today?

Sent from my BlackBerry 10 smartphone on the Rogers network.

**From:** Singer, Steve

**Sent:** August 21, 2015 06:18 PM

To: Michael, Connie Cc: Hewson, Kevin

**Subject:** FW: I have approved funding to get water to this port

I began dealing directly with the plumber in this matter.

He had thought the plan of action being proposed by BGIS could be completed by Wednesday or Thursday next week. The plumber confirmed that he did not have the proposed tank in stock and it would have to be ordered.

I have just received confirmation from the contractor that the tank will take one to two weeks to arrive after being ordered.

I have dealt with the plumber directly and have requested that he immediately make arrangements to obtain a large external bulk water tank, deliver it to POE Wild Horse and plumb it directly into the building. The plumber has accepted the work and is proceeding to procure the materials and begin installation tomorrow (Saturday Aug 22).

BOC update to follow

From: Walter Espinoza [mailto:Walter.Espinoza@brookfieldgis.com]

**Sent:** August 21, 2015 2:13 PM

To: Singer, Steve

**Subject:** RE: I have approved funding to get water to this port

Understood

Rob and I are calling the suppliers and trying to get a schedule together.

From: Singer, Steve [mailto:Steve.Singer@cbsa-asfc.gc.ca]

Sent: Friday, August 21, 2015 2:06 PM

To: Walter Espinoza

Subject: Re: I have approved funding to get water to this port

Before you move on this I need to approve it. I haven't signed off on this as of yet. I need that information I requested to determine if this will meet our needs.

Sent from my BlackBerry 10 smartphone on the Rogers network.

From: Walter Espinoza

**Sent:** Friday, August 21, 2015 2:02 PM

**To:** Singer, Steve; Michael, Connie; Jacobs, Sheldon: PWGSC / TPSGC **Cc:** Marsden, Kelly; Sherri MacKenzie; Oleg Vecherya; Brad Boser **Subject:** RE: I have approved funding to get water to this port

Hello Steve,

Not ignoring you at all as I know you have been calling me but I'm trying to coordinate the work.

From: Hewson, Kevin

**Sent:** August 21, 2015 07:06 PM

**To:** Patten, Brent; Michael, Connie; Patel, Nina

**Subject:** Fw: I have approved funding to get water to this port

BGIS has informed us that it will be 2 weeks before they repair Wild Horse with this solution.

Chief Singer has arranged for a temporary solution - see recently updated SEN.

Kevin

From: Walter Espinoza < Walter. Espinoza@brookfieldgis.com >

**Sent:** Friday, August 21, 2015 3:46 PM **To:** Singer, Steve; Michael, Connie

Cc: Hewson, Kevin; Brad Boser; Jacobs, Sheldon: PWGSC / TPSGC; Sherri MacKenzie; Oleg Vecherya

**Subject:** RE: I have approved funding to get water to this port

#### Hi Steve:

With all due respect I don't think messages are getting lost as opposed to selective listening/interpretation being employed. I can appreciate that you want this to happen immediately, and for the record if that was possible I would be in absolute agreement with this desire.

As I've stated I can't take actions unless I have approval for said actions under all circumstances including urgent matters such as this one. We can't selectively choose to omit requirements because they are inconvenient. Sherri and I only received approval for the work from Connie today at which time I immediately engaged the services of a contractor who is at present sourcing the required tank/parts. As I mentioned previously the contractor needs confirmation as to availability of said tank. A tank of this size is not a generic item, and as I'm sure you can appreciate is not commonly found on the shelf or contractor yard.

Work order for the vendor has been created GOC14590247 - temporary retention Tank" for Wildhorse to ensure parts and labour take place.

My comments are not meant to be overly harsh or inflammatory, but I do need you (CBSA) to understand that we are doing our best to resolve this situation under the parameters that I have at my disposal under the RP1 contract. At present I am awaiting timelines from the contractor and when I have this information I will certainly communicate this information to all concerned parties. Please note I have stressed the urgency of this matter with this contractor and have asked them to get this work completed asap. As I'm sure you have also spoken to him.

So to summarize if your expectation in that a tank will be put in place with electrical in plumbing completed there is absolutely no way this will happen in the next few hours. There is absolutely a plan in place that is being executed but realistically I can't meet your expectations nor does our contractor.

As a final note I might humbly point out that the idea of utilizing the bypass (which by design is meant to reduce the amount of problems this type of failure causes) has been completely ignored. We will continue to source the material from the contractor and resolved the issue.

I really don't know what else I can say at this point other than to reiterate that I will be in touch when I have additional information.

Walter Espinoza

From: Singer, Steve [mailto:Steve.Singer@cbsa-asfc.gc.c

**Sent:** Friday, August 21, 2015 2:50 PM **To:** Walter Espinoza; Michael, Connie

Cc: Hewson, Kevin

Subject: RE: I have approved funding to get water to this port

Importance: High

Walter I have the sense the message has gotten lost here as it obviously did last Friday.

The response time needed for this is immediately – not in a few days or weeks.

This tank under your proposal isn't actually in anyone's possession – I just spoke to the plumber and he doesn't have it and he's guessing that the nearest tank is in Sask somewhere in a distributors warehouse – all in all the plumber is thinking that this plan would get done Wednesday or Thursday next week.

Let's be very clear – the time frame for addressing this issue is in the next few hours.

If you don't have a plan that can accomplish this please tells us now.

S

#### Steve Singer

A/Chief, Operations Branch
Canada Border Services Agency / Government of Canada
Steve.Singer@cbsa-asfc.gc.ca / Tel: 403-647-7452 / TTY: 1-866-335-3237

A/Chef, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Steve.Singer@cbsa-asfc.gc.ca / Tél: 403-647-7452 / ATS: 1-866-335-3237

**From:** Walter Espinoza [mailto:Walter.Espinoza@brookfieldgis.com]

**Sent:** August 21, 2015 2:13 PM

To: Singer, Steve

**Subject:** RE: I have approved funding to get water to this port

Understood

Rob and I are calling the suppliers and trying to get a schedule together.

From: Singer, Steve [mailto:Steve.Singer@cbsa-asfc.gc.ca]

**Sent:** Friday, August 21, 2015 2:06 PM

**To:** Walter Espinoza

Subject: Re: I have approved funding to get water to this port

Before you move on this I need to approve it. I haven't signed off on this as of yet. I need that information I requested to determine if this will meet our needs.

Sent from my BlackBerry 10 smartphone on the Rogers network.

From: Walter Espinoza

**Sent:** Friday, August 21, 2015 2:02 PM

To: Singer, Steve; Michael, Connie; Jacobs, Sheldon: PWGSC / TPSGC Cc: Marsden, Kelly; Sherri MacKenzie; Oleg Vecherya; Brad Boser **Subject:** RE: I have approved funding to get water to this port

Hello Steve.

Not ignoring you at all as I know you have been calling me but I'm trying to coordinate the work.

I'm also working with the contractor to answer your technical questions before we receive your approval.

Tank capabilities and how it will work- (chemical treatment)

I will send you the Specs of the tank as you requested.

The contractor is currently working to provide a tentative schedule to obtain the tank and necessary parts for the job but he is also waiting for confirmation from his supplier.

Walter.

From: Singer, Steve [mailto:Steve.Singer@cbsa-asfc.gc.ca]

Sent: Friday, August 21, 2015 12:16 PM

To: Michael, Connie; Walter Espinoza; Jacobs, Sheldon: PWGSC / TPSGC Cc: Marsden, Kelly; Sherri MacKenzie; Oleg Vecherya; Brad Boser Subject: RE: I have approved funding to get water to this port

Standby - I'm putting together my questions

From: Michael, Connie

**Sent:** August 21, 2015 12:15 PM

To: 'Walter Espinoza'; Jacobs, Sheldon: PWGSC / TPSGC

Cc: Singer, Steve; Marsden, Kelly; Sherri MacKenzie; Oleq Vecherya; Brad Boser

**Subject:** RE: I have approved funding to get water to this port

Yes I approve. Please proceed as soon as possible.

Steve & Kelly – any concerns from your perspective?

Thanks,

Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada

Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations

Agence des services frontaliers du Canada / Gouvernement du Canada

Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

**From:** Walter Espinoza [mailto:Walter.Espinoza@brookfieldgis.com]

Sent: August 21, 2015 1:11 PM

To: Michael, Connie; Jacobs, Sheldon: PWGSC / TPSGC

Cc: Singer, Steve; Marsden, Kelly; Sherri MacKenzie; Oleg Vecherya; Brad Boser

**Subject:** RE: I have approved funding to get water to this port

Hello Connie,

What I have proposed for a temporary solution is as follows:

#### 1-120 gallon retention tank

Essentially what will happen is the bypass for the well will be activated as the pumps and chemical treatment at the well location are currently not functioning, and as we have determined need to be replaced. Once the water leaves the well (whether by the existing system or when on bypass) it is diverted to the 120 gallon tank where it is in turn pumped to the office and the trailer. So in a nutshell all of the pump capabilities and water treatment requirements will be configured to work from the 120 gallon tank on a temporary basis. Please note the retention is capable of maintaining the supply water to the sleep quarters via garden hose to the 333 gallon tank.

Please review and if you would like to proceed let myself and Sherri know and we will get the documentation going.

Regards

Walter

From: Michael, Connie [mailto:Connie.Michael@cbsa-asfc.gc.ca]

**Sent:** Friday, August 21, 2015 11:01 AM **To:** Jacobs, Sheldon: PWGSC / TPSGC

**Cc:** Walter Espinoza; Singer, Steve; Marsden, Kelly; Sherri MacKenzie **Subject:** RE: I have approved funding to get water to this port

Send me the work authorization and I will sign.

I will be using the O&M funding in the Region

It is repair

Action this immediately please as this is going to be raised at the President's level.

Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada

Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

**From:** Sheldon Jacobs [mailto:Sheldon.Jacobs@pwqsc-tpsqc.qc.ca]

**Sent:** August 21, 2015 10:47 AM

To: Michael, Connie

**Cc:** 'Walter Espinoza'; Singer, Steve; Marsden, Kelly; Sherri MacKenzie **Subject:** RE: I have approved funding to get water to this port

Hi Connie;

The next step is getting a Work Authorization signed.

Can you please advise what funding you will be using? Will it be Minor Capital or Repair? BGIS requires this info to complete the Work authorization.

#### Sheldon Jacobs

Property & Facility Manager, Saskatchewan

T: (306)975-6936 F: (306)975-5397 C:(306)716-0351

Public Works and Government Services Canada Government of Canada Building Suite 110, 101 - 22nd Street East Saskatoon, Saskatchewan S7K 0E1

**From:** Michael, Connie [mailto:Connie.Michael@cbsa-asfc.gc.ca]

Sent: August-21-15 9:24 AM

To: Sheldon Jacobs

Cc: 'Walter Espinoza'; Singer, Steve; Marsden, Kelly

**Subject:** I have approved funding to get water to this port

What else is required to make this happen. Money is not the issue.

We are doing long term solutions which is a separate issue. I want water to the port to ensure the port is not shut down.

Connie Michael

Manager of Infrastructure, Operations Branch
Canada Border Services Agency / Government of Canada
Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

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From:

Proudfoot, Hayley

Sent:

September 2, 2015 10:57 AM

To: Cc: Bowman, Stephan Morris, Martine

Subject:

FW: please proceed with the plan for the water at Wildhorse

FYI – the Wildhorse well project is moving ahead.

Н

From: Simonson, Lyle

**Sent:** September 2, 2015 9:52 AM **To:** Marsden, Kelly; Michael, Connie

Cc: Proudfoot, Hayley

**Subject:** RE: please proceed with the plan for the water at Wildhorse

If you mean the actual drilling I don't know yet. I have to send it out for quotes. I will do all the prep work to get the well drilled.

Lyle Simonson

Facility Officer / Operations Branch Canada Border Services Agency

Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Cel:306-502-6428 / TTY:1-866-335-3237

Agent des installations / Direction générale des opérations

Agence des services frontaliers du Canada

Lyle.Simonson@cbsa-asfc.gc.ca / 306-780-8372 / Tél. cell.:306-502-6428 / ATS:1-866-335-3237

From: Marsden, Kelly

**Sent:** September 2, 2015 7:49 AM **To:** Michael, Connie; Simonson, Lyle

Cc: Proudfoot, Hayley

**Subject:** RE: please proceed with the plan for the water at Wildhorse

Hi Guys:

Who is doing the work svp.

K

From: Michael, Connie

**Sent:** September 2, 2015 9:43 AM

**To:** Simonson, Lyle **Cc:** Marsden, Kelly

Subject: please proceed with the plan for the water at Wildhorse

Hi Lyle I- Due to winter fast approaching, I am authorizing you to proceed with the installation of a well at Wildhorse.

Please keep Kelly and I informed of the project as it evolves.

Thanks,

#### Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Public Works and
Government Services Canada

Travaux publics et
Services gouvernementaux
Canada

# SPECIFIC SERVICE AGREEMENT - REAL PROPERTY BRANCH CONVENTION PARTICULIÈRE DE SERVICES - BIENS IMMOBILIERS

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		2016-07-25			1		
Customer contact - Représentant du client	Tel. no. ∞ N° de tél.	Project manager - Gestionnaire de projet			Tel. no N° de tél.		
Lyle Simonson	(306) 780-8372 []	Sheidon Jacobs			[ (306) 975-6936 []		
2 Billing attention - Envol de facture à l'attention Gilles Abraham	de Tel. no N° de tél. (204) 983-4403 [ ]	Senior Project Manager Kelsey Fredrickser		oal de projet	Tel. no N° de têl. (204) 983-5849 [ 1		
Billing address - Adresse de facturation	[(204) 303-4403 [	Address - Adresse			[ \ZV4\) 303-3043 []		
100 - 269 Main Street Winnipeg, Manitoba R3C 1B3	167 Lombard Avenue Winnipeg, MB R3B 0T6						
Billing Email - Courriel de facturation	2530-7-60-00		Customer service unit - Équipe services clients				
Gilles.Abraham@cbsa-asfc.gc.ca  3   Customer reference no.(for invoice) - N° de réfe		Kelii Hayhurst	a mond	Danina Dá	2 [ 2 2		
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Previous years Années précédentes							
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Future years Années futures /					***************************************		
TOTAL	500.00	49,500.00			50,000.00		
ACCEPTANCE BY CUSTOMER - ACC		SERVICE PROVIDER AP	PROVAL - APPROB	ATION DU F	OURNISSEUR DE SERVICES		
Tambrae Knapp	Tel. no N° de tél.	18 Name - Nom Maria Durnitrescu		1	Tel. no N° de tél. (780) 497-3876 []		
Executive Directile	Fax. no N° de télécopleur	Title - Titre Technical Anthority,	863/		Fax. no N° de télécopleur (780) 497-3562		
Signature	126/16.	Signature	M		Date Silb. of - M		
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From: Michael, Connie

**Sent:** August 21, 2015 11:20 AM

To:Marsden, KellyCc:Singer, SteveSubject:FW: Water issues

Importance: High

Hi Kelly - To keep you informed that this is going to be reported to the BOC

Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

From: Singer, Steve

**Sent:** August 21, 2015 9:55 AM

**To:** Michael, Connie **Cc:** Hewson, Kevin

Subject: RE: Water issues

Importance: High

Connie

This represents a water system failure.

I have to respond accordingly. Before I put in a BOC do you want to discuss responses?

S

From: Anderson, Darryl

**Sent:** August 21, 2015 8:52 AM

To: Singer, Steve

Subject: FW: Water issues

Morning,

Water is intermittent....and is brown......UV light is bouncing up and down.....water is still running but an urgent ticket was put it.....fyi D

From: Meyer, Ryan

**Sent:** August 21, 2015 8:47 AM

**To:** Anderson, Darryl **Subject:** Water issues

Hey Darryl, I gave Brookfield a call. Here are the ticket numbers: UV light turning water off and on – 4352399, Brown colored water when it is running - 4352401

### Ryan Meyer

Border Services Officer, Operations Branch
Canada Border Services Agency / Government of Canada
Ryan.Meyer@cbsa-asfc.gc.ca / Tel: 403-868-2222 / TTY: 1-866-335-3237

Agent des services frontaliers, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Ryan.Meyer@cbsa-asfc.gc.ca / Tél: 403-868-2222 / ATS: 1-866-335-3237







From: Michael, Connie

**Sent:** August 23, 2015 11:32 AM

To: Simonson, Lyle

**Cc:** Singer, Steve; Marsden, Kelly **Subject:** FW: Water tank for Wildhorse

**Attachments:** IMG_0486.JPG; IMG_0487.JPG; IMG_0488.JPG

Hi Lyle – Here are the photos of the temporary solution for Wildhorse. I do not understand why this was so difficult for BGIS to figure out.

You and I will be talking to Senior Management on Monday to resolve the poor service that we received from BGIS.

Kelly – I know you have escalated this matter at your end. We are doing the same in Winnipeg.

Steve – Thank you for your support and working with the plumber to resolve an issue that could have meant we would have to shut down the POE.

#### Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

From: Singer, Steve

Sent: August 22, 2015 4:20 PM

To: Michael, Connie

**Subject:** Fw: Water tank for Wildhorse

Sent from my BlackBerry 10 smartphone on the Rogers network.

From: Anderson, Darryl < Darryl. Anderson@cbsa-asfc.gc.ca>

**Sent:** Saturday, August 22, 2015 15:11

**To:** Singer, Steve **Cc:** Hewson, Kevin

Subject: Fw: Water tank for Wildhorse

Sent from my BlackBerry 10 smartphone on the Rogers network.

From: Meyer, Ryan <Ryan.Meyer@cbsa-asfc.gc.ca>

**Sent:** Saturday, August 22, 2015 14:35

To: Anderson, Darryl

**Subject:** Water tank for Wildhorse

Ryan Meyer

Border Services Officer, Operations Branch Canada Border Services Agency / Government of Canada Ryan.Meyer@cbsa-asfc.gc.ca / TEL: 403-868-2222 Fax: 403-868-2055

Agent des services frontaliers, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Ryan.Meyer@cbsa-asfc.gc.ca / Tél: 403-868-2222 / ATS: 403-868-2055



Canada Border Services Agency Agence des services frontaliers du Canada

From: Knapp, Tambrae

**Sent:** September 4, 2015 03:42 PM

**To:** Michael, Connie **Cc:** Proudfoot, Hayley

**Subject:** FW: Wild Horse POE well drilling project. **Attachments:** Wildhorse CBSA POE - Well Drilling

#### Hi Connie

Are you ok to do this call today without us?

Stephen is away today. Hayley Proudfoot is able to participate as well depending on the time. She is going to send you the report she has – I understand Lyle as it as well.

Can you confirm if this is at 4:30 Alberta time or 4:30 Ottawa (sometimes my computer chges it automatically) We cd also have a quick chat if that wd be helpful.

TK

#### Tambrae Knapp,

Executive Director, Infrastructure/Directrice exécutif, Infrastructure

Infrastructure and Environmental Operations, Comptrollership Branch/ Infrastructure et opérations environnementales, Direction générale du contrôle

Canada Border Services Agency/Agence des services frontaliers du Canada

Government of Canada/Gouvernemnt du Canada

tambrae.knapp@cbsa-asfc.gc.ca / Tel: 343-291-5825 / TTY: 866-335-3237

**From:** Kelli Hayhurst [mailto:Kelli.Hayhurst@pwgsc-tpsgc.gc.ca]

**Sent:** September 4, 2015 1:58 PM

To: Knapp, Tambrae

Subject: FW: Wild Horse POE well drilling project.

Hi Tambrae,

Here is the go forward plan for today. I don't think it's necessary for either of us to attend the call, but good to note it is taking place, and that the contractor is doing everything possible to complete this work.

Cheers,

#### Kelli Hayhurst

Client Service Director, Western Region

Public Works and Government Services Canada / Government of Canada

kelli.hayhurst@pwgsc-tpsgc.gc.ca / Tel: 204-891-0729

Directrice, Service à la clientèle, Région de l'ouest

Travaux publics et Services gouvernementaux Canada / Gouvernement du Canada

kelli.hayhurst@tpsgc-pwgsc.gc.ca / Tél.: 204-891-0729

From: Maria Dumitrescu

**Sent:** September-04-15 11:24 AM

To: 'Marsden, Kelly'

**Cc:** Michael, Connie; Proudfoot, Hayley; Kelli Hayhurst **Subject:** RE: Wild Horse POE well drilling project.

Kelly,

I just wanted to close the loop with you and others.

We have scheduled a meeting today for all stakeholders to participate and discuss the situation and the next steps (invite is attached).

Thank You - Merci Kindest Regards - Salutations Cordiales WESTERN REGION @ your service

Maria Dumitrescu, M.Eng., P.Eng.

Regional Director, Professional and Technical Services Branch Western Region Public Works and Government Services Canada / Government of Canada Maria.Dumitrescu@tpsgc-pwgsc.gc.ca / Tel:780-497-3876/Cell: 780-288-3453

Directrice régionale, Services Professionnels et Techniques Région de l'Ouest Travaux Publics et Services Gouvernementaux Canada / Gouvernement du Canada Maria. Dumitrescu@tpsgc-pwgsc.gc.ca /Tél. :780-497-3876/ Tél. cell: 780-288-3453



Public Works and Government Services Canada Travaux publics et Services gouvernementaux Canada Canada

From: Marsden, Kelly [mailto:Kelly.Marsden@cbsa-asfc.gc.ca]

Sent: Wednesday, September 02, 2015 4:39 PM

To: Maria Dumitrescu

**Cc:** Michael, Connie; Proudfoot, Hayley **Subject:** Wild Horse POE well drilling project.

Maria:

I'm writing to raise to a significant issue we are having with BGIS at our port of entry in Wild Horse AB.

We had a complete water system failure and had a very difficult time mobilizing BGIS to deal with this emergency and now we can not get confirmation that the new well will be drilled this year.

Our PW account executive said once BGIS is non responsive at the site (Walter) and Regional level (Jacquline) you are the next person in the cue responsible to action this.

Unfortunately, I will be out of the country for the next few days and with only infrequent access to email so please follow up with Connie directly. It is unacceptable that we can not have this well drilled this year.

Thank you,

Κ

Director,
Environmental Operations
CBSA

Sent from my BlackBerry 10 smartphone on the Rogers network.

#### Crupi, Kayla

From: Michael, Connie

**Sent:** September 5, 2015 10:01 AM **To:** Mayer, John: PWGSC / TPSGC

**Subject:** FW: Wild Horse Risk Assessment Report

**Attachments:** PWGSC-CBSA-Potable Water Risk Assessment-Wild Horse-Final Rpt-130314.doc;

Figure 01.pdf; Figure 02.pdf; Figure 03.pdf; Figure 04.pdf; Figure 05.pdf; Figure

06.pdf; Figure 07.pdf; Figure 08.pdf

For our call on Tuesday

Connie Michael

Manager of Infrastructure, Operations Branch Canada Border Services Agency / Government of Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

Gestionnaire de l'infrastructure, Direction générale des opérations Agence des services frontaliers du Canada / Gouvernement du Canada Connie.Michael@cbsa-asfc.gc.ca / Tel: 204-983-4622 / Cell: 204-292-3876 / TTY: 866-335-3237

From: Proudfoot, Hayley

Sent: September 4, 2015 2:49 PM

**To:** Michael, Connie **Cc:** Simonson, Lyle

Subject: Wild Horse Risk Assessment Report

Hi Connie,

This Potable Water Risk Assessment Report will help on the call this afternoon.

Hayley

Hayley Proudfoot
Environmental Analyst | Analyste de l'environnement
Environmental Programs Division | Division des programmes environnementaux
Canada Border Services Agency | Agence des services frontaliers du Canada
355 North River Road, Tower B, 19th Floor, Room 19025 | 355 chemin North River, tours B, 19e étage, 19025
Ottawa, ON K1A 0L8

Telephone: (343) 291-5834 Blackberry: (613) 866-7144

Email: Hayley.Proudfoot@cbsa-asfc.gc.ca

#### ASFC - Divulgation en vertu de la loi sur l'Accès à

## PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Canada Border Services Agency Site-Specific Potable Water Risk Assessment Wild Horse Border Crossing Facility, Alberta



March 2013

Project No.: 0125 056 02

#### Prepared for:

Public Works and Government Services Canada 5th Floor, Telus Plaza North, 10025 Jasper Avenue Edmonton, Alberta T5J 1S6

#### Prepared by:

EGE Engineering Ltd. 511 Pepperloaf Cres. Winnipeg, Manitoba R3R 1E6

# EGE Engineering Ltd. Engineering, Geosciences & Environmental

March 14, 2013 File: 0125 056 02

Public Works and Government Services Canada Environmental Services 5th Floor, Telus Plaza North, 10025 Jasper Avenue Edmonton, Alberta T5J 1S6

Attention: Mr. Michael Brownlee

**Environmental Specialist** 

RE: Site-Specific Potable Water Risk Assessment Wild Horse Border Crossing Facility, Alberta

Dear Mr. Brownlee,

EGE Engineering Ltd. is pleased to submit the following report on the Site-Specific Potable Water Risk Assessment completed at the Wild Horse Border Crossing Facility located south of Wild Horse, Alberta. The site-specific risk assessment was carried out to document the existing potable water management system and to develop a water management plan to assist the facility manager in meeting their obligations to ensure safe drinking water at the facility.

Should you have any questions or require any additional information on the report please contact the undersigned at (204) 226-7378.

Sincerely,

EGE ENGINEERING LTD.

Larry Bielus, M.Sc., P.Eng. Senior Geological Engineer Lpb/lb

### **Executive Summary**

EGE Engineering Ltd. (EGE), in association with Associated Engineering (AE), were retained by Public Works and Government Services Canada (PWGSC), on behalf of the Canada Border Services Agency (CBSA), to conduct a Site-Specific Potable Water Risk Assessment at the Wild Horse Border Crossing Facility located south of Wild Horse, Alberta.

#### **Project Objectives**

As outlined in the Terms of Reference, the specific project objectives included: completing a comprehensive assessment of the potable water management system at the Wild Horse Border Crossing Facility (vulnerability of the water source, inspection/description of the distribution system, and identifying the responsibility/qualifications of the system operators and record keeping/administrative components); preparation of a site-specific potable water management plan for the site to guide the facility manager in respecting their obligations to ensure safe drinking water is provided to staff and visitors; and updating the CBSA Facility Management Database with the current information and to determine whether the overall ranking, using a risk-based evaluation tool, have changed.

#### Scope of Work

The scope of work was divided into three main components, including: the pre-assessment activities; the on-site activities; and the post-assessment activities. The pre-assessment activities included: a review of available records and reports for the Wild Horse Border Crossing Facility, as provided by CBSA; contact with the Facility Manager to discuss the proposed schedule and agenda for the site inspection and assessment activities; a project initiation meeting with PWGSC and CBSA; and preparation of a site-specific Health and Safety Plan. The on-site assessment activities included: an opening assessment meeting; preparation of site and water treatment room drawings; an interview with the water treatment operator; reviewing the potable water source; assessing the well and bottled water use; reviewing the completed CBSA checklist; and a closing assessment meeting. The post-assessment activities included: completion of the Site-Specific Potable Water Quality Risk Assessment report and the Site-Specific Potable Water Management Plan. The latter has been prepared as a stand alone document.

#### Site Description

The Wild Horse Border Crossing facility is located on Provincial Highway 41, approximately 120 km south of Medicine Hat, Alberta and 20 km west of the Saskatchewan border. The 142 by 142 m property is occupied by a CPE (Customs Port of Entry) office building and small storage shed at the southeast corner, a residence and detached garage at the southwest corner (West Residence), and a second residence and detached garage/emergency generator building (East Residence) located in the south central area of the property. A RCMP communication tower is also located in the southeast corner of the site. The buildings occupy approximately 1.75% of the site, with the remainder of the site comprised of landscaped and naturally vegetated areas, and parking/driveway areas along the south boundary of the site.

Independent septic systems are installed at each of the two residences and the CPE building. The systems consist of: two dual-chamber fibreglass tanks (residences) and one dual-chamber concrete septic tank (CPE building); and septic ejector jets that discharge to the surface north of each building. There is also a fourth ejector jet northeast of the current CPE building ejector jet that is no longer in use.

The septic tank and ejector jet for the CPE building are located approximately 17 m west-southwest and 45 m north of the existing water well, respectively. The construction details and exact location of a septic field north of the west residence are not known, however, based on a previous site plan provided by CBSA, the field is shown to be approximately 20 m north of the building. The same site plan also illustrates two former in-ground septic fields approximately 15 and 25 m north of the CPE building, which likely served both the east residence and the CPE Building. Information provided by CBSA also indicates that a landfill was located in the northeast corner of the property, however, the exact location is unknown.

The surrounding land use consists of Range Road 23A and natural grass/pasture land to the west, natural grassland to the north, east and southwest, crop land to the southeast (U.S.), and the Port of Wild Horse U.S. Customs crossing located across Highway 41 south of the site. The nearest surface water body is a small creek located approximately 400 m northeast of the site.

The staffing and visitor information provided by CBSA indicates the water system at the Wild Horse Border Crossing Facility would be classified as a "micro-system", which is a system that serves up to twenty-five people.

#### Site-Specific Risk Assessment Findings

The following is a list of issues and comments noted from the site visit, inspection and interviews. Signs were posted at all consumption locations in the CPE building and the two residence buildings, indicating that the water was non-potable and should not be consumed.

Item	Issues & Comments
Source Water and Wellhead	<ul> <li>Poor drainage away from the wellhead.</li> <li>Septic tank and septic field located in close proximity to the wellhead.</li> <li>Septic ejectors located close to the wellhead and property line.</li> <li>Former ASTs located in CPE building, close to the wellhead.</li> <li>Former AST inside west residence, located near wellhead.</li> <li>Potential USTs located near wellhead.</li> <li>Former landfill (dump site) located near wellhead.</li> </ul>
Raw Water Supply Pipe	No items noted.
Hydro Pneumatic Tank	No items noted.
Pressure Switch	No items noted.
Multimedia Filter	No items noted.
MMF Control Valve	No items noted.

EGE ii

ltem	Issues & Comments
Iron Guard Softener	No items noted.
Softener Control Valve	No items noted.
Brine Tank	No items noted.
Tannin Removal	No items noted.
UV Reactor	The installed UV system should be upgraded to a different model that is NSF Standard 55 Class A.
Building Plumbing	No items noted.
Maintenance Intervals	The maintenance schedule may have to be modified to allow for trips to site to replenish the brine tank salt and chemical. This could also be coordinated with the designated PWGSC representative.
Interviews with Staff	No items noted.
Site Observations	<ul> <li>The bottled water supply is only available to staff. There is no potable water supply for the public who use the washroom facilities.</li> <li>There are no hand sanitizers for use in the washrooms and there is a risk that pathogens and viruses can be transferred after washing hands in non-potable water.</li> </ul>
Reverse Osmosis for Drinking Water	<ul> <li>There may be some misconception that the reverse osmosis treatment system will remove any pathogens or viruses remaining in the treated water. This cannot be guaranteed with the currently installed system because, as with many RO systems, there is no form of "integrity" testing to prove that contaminated water has not "leaked" around the membrane. Primary disinfection with chlorine and UV disinfection for multi-barrier treatment would be required to achieve sufficient pathogen and virus inactivation.</li> <li>Reverse Osmosis also has no nutritional value as drinking water. It does not contain the typical essential minerals commonly found in municipal water supplies. It is typically not recommended that pure deionized RO water be the only form of water consumed by individuals.</li> </ul>
No Disinfection in Distribution System	<ul> <li>The facility does not employ any form of primary disinfection. Due to a history of microbiological contamination in the raw water supply, the system should include both chlorine and UV disinfection to inactivate pathogens and viruses using a multi-barrier approach.</li> <li>As an option, due to the small size and remote location of the facility, the micro-system could employ UV as the primary disinfection option, as long as there was stringent and frequent monitoring of the water quality, and bottled water was available on-site at all times and used as the primary potable water supply.</li> </ul>

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The following is a list of the risks and vulnerabilities noted from the site visit and interviews:

Item	Risks and Vulnerabilities	Level of Risk
Source Water Protection	The presence of septic tanks on-site and operation of septic ejectors north of the buildings increases the vulnerability of the local and regional aquifer to contamination.	• Low
	The practice of surface discharge of wastewater on the property should be discontinued as this practice poses a risk to the well head and source water contamination. The ejectors do not meet the setback distance of 90 m from the property line or 50 m from a well.	Medium
	The surrounding agricultural and livestock land use increases the vulnerability of the regional aquifer.	• Low
	The presence of former on-site ASTs and USTs containing heating oil increases the vulnerability of the local aquifer to contamination.	• Low
	The presence of a former landfill (dump site) north of the CPE building increases the vulnerability of the local aquifer to contamination.	Medium
	The presence of three abandoned wells, and possibly the presence of an additional abandoned well at an unknown location, increases the vulnerability of the local aquifer to contamination.	Medium
Wellhead Protection	Poor drainage away from the wellhead increases the vulnerability of the aquifer to contamination from surface infiltration along the well casing or directly into the well head.	Medium
CPE Building Water Treatment System and Distribution System	The current water treatment system is not adequate to achieve sufficient pathogen and virus inactivation. With a history of positive results for microbiological contamination of the raw water source, the system should be upgraded, with primary disinfection through chlorine, and UV disinfection retained for multi-barrier treatment. The system is vulnerable to the transmission of pathogens and viruses to the users, even when not consuming the water.	Medium
No Chlorine Residual in Distribution System	Lack of chlorine residual in the distribution system increases the risk that bacterial amplification may occur and that pathogens can be transmitted by the water distribution system. Although a chlorine residual is not technically required for a micro-system, it may still occur when chlorine is used as a disinfectant.	• Low
Bottled Water Supply for Public Use	The only bottled water supply is located in the staff area. Without an obvious source of potable water for the public, there is a risk that visitors to the facility may drink water in the public washroom.	• Low

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Item	Risks and Vulnerabilities	Level of Risk
Hand Washing in Public Washroom	<ul> <li>There is a risk that pathogens and viruses can be transferred after washing hands in non-potable water. The lack of a hand sanitizer and instructions for use in the washroom increases the risk of this transfer.</li> </ul>	• Low
Regular Maintenance of Bottled Water Dispensers	Bottled water systems have the potential to develop bacterial growth without proper and regular maintenance to sanitize the system.	• Low
Providing Non- Potable Water to Living Quarters (East and West Residences)	<ul> <li>The CBSA employees reside both on-site and off-site, and therefore, a habit change is required when living on-site to adjust to the non-potable water source and to avoid consumption of the water. There is an increased risk for ingestion based on habits developed from living with potable water. Individuals who live with non-potable water develop stronger habits to avoid unnecessary consumption of the water, and they can also develop some tolerance to the specific water quality.</li> <li>The CBSA employees may accidentally ingest non-potable water during normal activities such as brushing teeth, washing hands, washing food and showering (see below).</li> </ul>	• Low
Presence of Showers	The showers in all three buildings are supplied with non-potable water, which increases the risk of ingestion of non-potable water and/or inhalation of non-potable water vapor, thereby transferring pathogens and viruses to the user.	• Low
UV System Not Certified	The UV unit for a small public water system such as the CBSA Wild Horse Facility is required to be Certified NSF Standard 55 Class A.  The existing UV unit (Sterilight Cobalt SCM-320) is not certified to the required standard for a public water system. The manufacturer recommends primary disinfection (chlorination) prior to secondary disinfection (UV) for this reactor model.	Medium     Medium
Reverse Osmosis for Drinking Water	There may be some misconception that the reverse osmosis treatment system will remove any pathogens or viruses remaining in the treated water. This cannot be guaranteed with the currently installed system because, as with many RO systems, there is no form of "integrity" testing to prove that contaminated water has not "leaked" around the membrane. Primary disinfection with chlorine and UV disinfection for multibarrier treatment would be required for sufficient pathogen and virus inactivation.	Medium

The risk-based evaluation tool for potable water management was completed for the Wild Horse Border Crossing Facility, using information gathered during this Site-Specific Potable Water Risk Assessment. The updated rating, based on the 2012 assessment, is 5 flags, with corrective action recommended.

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#### **Conclusions and Recommendations**

The following is a list of recommendations for corrective actions for the critical items, specifically health and safety based issues. There are no recommendations for corrective actions for non-critical items.

Critical Issues	Corrective Action(s)
Presence of Showers	<ul> <li>Provide warning signs to indicate "Do not ingest any water. Wash hands with disinfectant after showering".</li> <li>Alternatively, provide a potable water supply to the showers.</li> </ul>
Hand Washing in Public Washroom	<ul> <li>Install hand sanitizer and instructions for use in the washrooms within the CPE building and residences.</li> <li>Ensure that the existing signs that indicate "Do Not Drink - Non-Potable Water" are maintained in clearly visible locations.</li> </ul>
Bottled Water Supply for Public Use	<ul> <li>Install a second bottled water dispenser in a public access area at the CPE building.</li> <li>Clearly label the bottled water systems to indicate they are the only potable water source in the buildings.</li> </ul>
CPE Building Water Treatment System and No Chlorine Residual in the Distribution System	<ul> <li>With positive results indicating a history of contamination of the raw water supply, the water treatment system should be upgraded, with primary disinfection using chlorine, and UV disinfection retained for multi-barrier treatment to address pathogens and viruses present in the raw water source. This would include upgrading the UV system to be Certified NSF Standard 55 Class A.</li> <li>Due to the limited number of staff and visitors, the water system is classified as a micro-system. The 2009 Guidance for Providing Safe Drinking Water in Areas of Federal Jurisdiction states that chlorine residuals (secondary disinfection) are not required for micro-systems. However, primary disinfection is recommended for virus and pathogen inactivation. Therefore, it is recommended that chlorine be added for primary disinfection for inactivation of pathogens and viruses.</li> <li>As an option, UV disinfection could be used without chlorine disinfection (as per the present situation), to supply water to the sinks, toilets and showers, but this system is not recommended for potable water use. If UV disinfection was retained without chlorine, there would need to be a stringent and frequent monitoring program for bacteriological parameters, and the bottled water systems would need to be maintained on-site as the primary potable water supply.</li> <li>Until chlorine disinfection is added to the treatment process, the site should develop a regular flushing sanitization program of the building plumbing system to mitigate against bacterial growth in the system.</li> <li>Regular sampling at all POU locations for HPC will help to indicate the presence of bacteria colonies and dictate the sanitization frequency.</li> </ul>
Regular Maintenance of Bottled Water Dispensers	Prepare and implement a maintenance schedule for regular sanitization of the current bottled water dispensers (at least two to three times per year) to help prevent bacterial contamination of the dispensing units.

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Critical Issues	Corrective Action(s)
Source Water Protection	<ul> <li>Upgrade the water treatment system with the primary disinfection system as noted above to provide multi-barrier treatment and protection for users against a contaminated water source.</li> <li>The practice of surface discharge of wastewater on the property should be discontinued, as it continues to pose a risk to the well head and source water contamination, and may reduce the benefits of shock chlorination treatments by re-contaminating the water supply. There is no location available on-site that meets the setback distance of 90 m from a property line. The ejector discharge system should be replaced with septic leaching beds located at least 15 m (preferably greater) from the water well.</li> <li>The concrete septic tank at the CPE building should also be replaced with a fibreglass tank.</li> <li>Properly decommission all former wells located on the property.</li> </ul>
Wellhead Protection	Complete earth works to provide at least a 300 to 400 mm mound around the well casing and positive drainage away from wellhead.

Based on the work detailed in the above tables, the budget cost to execute the critical work items is estimated at \$93,000. The annual operating and maintenance cost for the recommended upgraded water treatment system, which includes primary and secondary disinfection, is \$1,000 per year for chemicals such as chlorine, RES Care, salt and resin top up; and replaceable or consumable parts such as UV lamps and sleeves, and chemical feed pump seals. The cost for monthly maintenance of the equipment by the current contractor is estimated at \$1,000 per trip or \$12,000 per year, including time and travel expenses. Alternatively, the PWGSC representative could take responsibility for some of the regular maintenance to save on the operation and maintenance costs.

The raw water source should be considered non-potable until such time as proper disinfection can be installed. However, in order to evaluate the risks of using the non-potable water until disinfection can be achieved, quarterly sampling of the various POU locations in the CPE building and both residences is recommended. The analytical program should include the microbiological parameters (total coliforms and *E.coli*), total metals and general chemistry. The raw water source should also be included in the quarterly sampling, to evaluate whether biological amplification is occurring within the treatment and distribution system, and to assist in developing short term mitigation measures.

Since the potable water supplied to the site is bottled, the bottled water dispensers should also be monitored twice yearly for microbiological parameters (total coliforms and *E.coli*), to assist in evaluating the effectiveness of the recommended sanitization protocol. As a check on the supplied bottled water source, the twice yearly sampling should also include the analysis of total metals and general chemistry.

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#### 1.0 INTRODUCTION

EGE Engineering Ltd. (EGE), in association with Associated Engineering (AE), were retained by Public Works and Government Services Canada (PWGSC), Environmental Services Branch - Western Region, on behalf of the Canada Border Services Agency (CBSA), to conduct a Site-Specific Potable Water Risk Assessment at the Wild Horse Border Crossing Facility located south of Wild Horse, Alberta. The program was completed under the Environmental Services Supply Agreement, PWGSC File Number R.060382.002 and in accordance with EGE's proposal, dated October 2, 2012 (1).

The Site-Specific Potable Water Risk Assessment was conducted following the guidelines, principles and information sources referenced in the Terms of Reference (ToR) ⁽²⁾, including: Health Canada's *Guidance for Providing Safe Drinking Water in Areas of Federal Jurisdiction* (June 2010) ⁽³⁾; *CBSA National Potable Water Quality Monitoring Program*; *CBSA Facility Management Database*; *CBSA Checklist*; Health Canada's *Guidelines for Canadian Drinking Water Quality* (December 2010) ⁽⁴⁾; and *Risk-Based Evaluation Tool for Potable Water Management at CBSA Border Crossing Facilities* (December 2011) ⁽⁵⁾.

As outlined in the ToR, the specific project objectives included:

- Completing a comprehensive assessment of the potable water management system at the Wild Horse Border Crossing Facility in Alberta. This work was to include an evaluation of the following broader components:
  - Vulnerability of the water source;
  - Inspection and description of the whole distribution system;
  - o Responsibility and qualifications of the system operators; and
  - Record keeping and administrative components.
- Preparation of a site-specific potable water management plan for the Wild Horse Border Crossing
  Facility to guide the facility manager in respecting their obligations to ensure safe drinking water
  is provided to staff and visitors.
- Updating the CBSA Facility Management Database with the current information and determine whether the overall ranking, using a risk-based evaluation tool, have changed.

The following report provides: a description of the mandate; details on the assessment methodology; a description of the site conditions; a discussion of the findings, observations, vulnerabilities and risks; and a discussion on the conclusions and recommendations.

#### 1.1 BACKGROUND AND DESCRIPTION OF MANDATE

As a federal employer, CBSA is required to ensure that the drinking water that it provides to staff and visitors at its border crossing facilities across the country is safe, reliable and available in sufficient quantity. Health Canada provides guidance that is intended to assist federal site managers in fulfilling their obligations in providing safe potable water, but in some cases, a concerted effort is needed to adequately evaluate the state of its systems that will ultimately result in corrective actions being taken (where necessary), and regular site-specific water quality monitoring being performed.

The CBSA is responsible for approximately 80 custodial border crossing facilities across Canada that provide a non-municipal water supply. Many of these facilities are isolated and most locations have to rely on their own local source, such as a surface reservoir or water well, rather than a municipal water supply. Water treatment processes such as filtration, softening or disinfection vary a great deal from site to site, and at some border crossing facilities, the water systems supply multiple buildings, including staff residences.

CBSA has been conducting various levels of drinking water quality monitoring at its facilities since 2004, with the focus to characterize the quality of the water and to respond to non-compliant analytical results. The components most notably absent from the recent annual sampling programs include an assessment of the vulnerability of the water source, a sanitary survey or inspection of the distribution system and associated water treatment equipment (where they exist), and a review of the staff's management and the operational framework for managing the water supply and distribution network.

CBSA has recently developed a Facility Management Database that incorporates much of the project elements discussed above into an overall, risk-based, vulnerability ranking system. The Database is used to assist CBSA in prioritizing locations that require corrective action. Through the series of Site-Specific Potable Water Risk Assessments being completed, information is being collected at border crossing facilities to allow for a complete portrait of all components of the potable water management situation at each facility. Flowing from this work is the development of a Site-Specific Potable Water Management Plan for each site.

As noted above, CBSA, through PWGSC, has contracted EGE to complete a Site-Specific Potable Water Risk Assessment and Site-Specific Potable Water Management Plan for the Wild Horse Border Crossing Facility.

#### 1.2 DESCIPTION OF BORDER CROSSING FACILITY AND POTABLE WATER SYSTEM

The Directory of Federal Real Property (DFRP) number, Federal Contaminated Site Inventory (FCSI) number, property description, site address and latitude and longitude coordinates for the Wild Horse Border Crossing Facility are tabled below.

Property Description	Site Address	Latitude, Longitude	DFRP	FCSI
Wild Horse Border	Highway 41,	48.999862	14948	14948001
Crossing Facility	Wild Horse, Alberta	-110.216346	14946	14946001

The DFRP registry lists five buildings at the Wild Horse Border Crossing Facility. These include: a 69 m² building used for law enforcement and corrections (CPE building); three 20 m² offices; and a 20 m² building reportedly used as a warehouse, storage area and workshop. All of the buildings were reportedly constructed in 1958. All of the buildings listed in the DFRP registry appear to have been replaced, with the exception of the CPE building, as the number/size of the existing structures do not match those listed in the registry, however, it is possible that the building sizes in the registry were entered incorrectly.

At present there are six structures on the property, including: the CPE building (as listed in the DFRP registry), with a recently constructed 64 m² attached vehicle inspection canopy; a 98 m² residence and a 68 m² detached garage in the southwest corner of the property; a 120 m² residence and a 68 m² detached garage in the south central area of the property; and an 11 m² wooden shed located northwest of the CPE building. The construction date of the two existing residences are unknown (possibly 1958 or later), however, both detached garages appear to have been recently constructed (late 2000's). An RCMP Communication Tower is also located at the southeast corner of the site. CBSA and PWGSC are not involved in the administration of the RCMP Communication Tower or the communication equipment that is located in the basement of the CPE building.

Figure 01 provides a location plan for the Wild Horse Border Crossing Facility and Figure 02 shows the surrounding land use. Figure 03 provides a detailed plan of the site. Representative photographs of the on-site structures are provided below.



Photo 01: Current CPE Building.

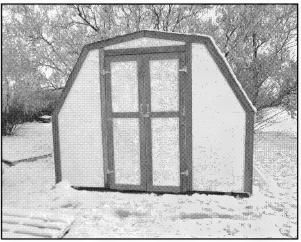


Photo 02: Wooden Storage Shed.



Photo 03: West Residence.

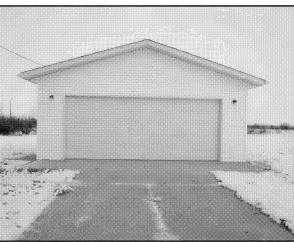


Photo 04: West Residence Detached Garage.





Photo 05: East Residence.

Photo 06: East Residence Detached Garage.

The image below illustrates the current border crossing facility layout.

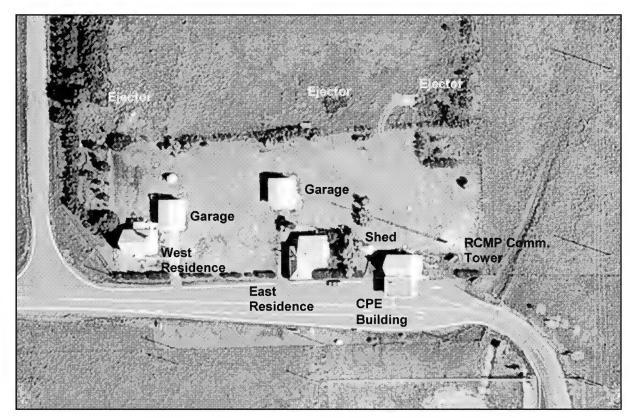


Photo 07: Bing Maps image showing the current Wild Horse Border Crossing Facility layout.

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Information in the FCSI database indicates that there is approximately 20 m³ of contaminated material present at the site. The database identified that the site has reached Step 09, which includes confirmatory sampling and final reporting. The site was given a category classification of 2, which indicates action is likely required.

The raw water supply for the Wild Horse Border Crossing Facility is a single groundwater well located on site. This well was originally drilled in May 1989, to a depth of 30.48 m, with a screened interval between 15.85 and 18.90 m. The well was deepened to 91.44 m in November 1989, with a second 0.1 m diameter steel liner, and perforations extending between 85.34 and 91.44 m and an open bottom. The raw water pipeline between the well and the CPE building is a 25 mm high density polyethylene (HDPE) pipe. The pipe enters the CPE building at the northeast corner of the basement. The raw water line passes through a flow restrictor prior to being reduced down to a 19 mm copper pipe. The raw water is then passed through a Point-of-Entry water treatment system and distributed to the east and west residences and the fixtures in the CPE building.

Potable water had recently been provided by an on-site bottling station located in the basement of the CPE building. Water from the CPE treatment system was supplied to the bottling station, where it underwent additional treatment through a WTR 300 commercial reverse osmosis system and carbon filtration. Refillable 20 L water containers were used by staff at individual water coolers located in the CPE building and both residences. These water cooler locations are not readily accessible to visitors. The recent water quality results have been positive for coliforms and the Facility is now obtaining bottled water from a third party supplier in Lethbridge, Alberta (Water Pure & Simple).

#### 2.0 METHODOLOGY

The following sections provide an overview of the assessment methodology used during completion of the Site-Specific Potable Water Risk Assessment at the Wild Horse Border Crossing Facility.

#### 2.1 PRE-ASSESSMENT ACTIVITIES

The pre-assessment activities consisted of a review of available records and reports for the Wild Horse Border Crossing Facility, as provided by CBSA. These documents consisted of potable water quality sampling reports completed during the period from 2001 to 2011. Water quality information provided in these reports was compared with the Health Canada - Guidelines for Canadian Drinking Water Quality (HC-GCDWQ).

EGE contacted the Facility Manager to submit a proposed schedule and agenda for the site inspection and assessment activities, and outlined the requirements for the availability of facility personnel during the inspection period. As part of this task, EGE also held a project initiation meeting with PWGSC and CBSA through a conference call. During this call, CBSA provided site-specific information and outlined the project expectations, and EGE discussed the logistics of the site-specific risk assessment, and confirmed its understanding of the project goals and objectives. A project communications plan was agreed to in order to ensure all appropriate PWGSC and CBSA staff would be kept informed throughout the project. The overall project schedule and deliverables were also discussed and confirmed.

A site-specific Health and Safety Plan (HASP) was also developed and is included as Appendix A. Key issues included: personal protective equipment requirements; safety training; contingency plans; contact information; and hazard assessment. The HASP was available on the project site at all times.

#### 2.2 ON-SITE ASSESSMENT METHODOLOGY

As outlined in the ToR, the on-site investigation and assessment activities were guided by the Checklist provided by CBSA and developed to standardize data collection at CBSA Border Crossing Facilities. The specific tasks that were completed at the Wild Horse Border Crossing Facility are outlined below.

#### 2.2.1 Opening Assessment Meeting

This task was conducted via teleconference with the Facility Manager and included details of the program objectives and assessment process, and identified any documents, service or assistance that would be required from the Facility Manager to conduct the assessment. EGE also reviewed the HASP with the Facility Manager at this time and discussed security issues. The Facility Manager provided the personal contact information for the water system operator. EGE also inquired about any historical issues with the water treatment and distribution system.

#### 2.2.2 Facility Site Drawing

EGE collected all required information in order to prepare a to-scale site drawing of the border crossing facility.

The following required elements were obtained and clearly identified on the drawing:

- Property line, fences and gates;
- All buildings and other structures;
- Roadways;
- Public access points;
- Parking areas;
- Magnetic north;
- Location of the potable water source;
- Septic tanks and fields;
- Presumed underground water and sewer lines;
- Potable water point of entry (POE);
- Location of water treatment equipment;
- · Other underground structures;
- Slope of all surfaces;
- Presumed site geology; and
- Presumed direction of groundwater flow.

EGE used a combination of GPS, walking wheel, tape measure and site photographs to compile the required information for the facility site drawing.

#### 2.2.3 Water Treatment Room Drawing

A detailed drawing was prepared for all mechanical rooms or other locations where any potable water treatment equipment was installed. For mechanical piping, the diameter and construction material was identified. The POE location was clearly shown and equipment installed in the treatment room was identified, whether it was in-use or not.

An equipment list was also compiled that included the manufacturer, model number, capacity and any other identifying characteristics. The hot water tank location was shown, along with the heating type and source. Where serviced components were present (such as filters and resin beds), the type of replacement product used was noted. A list of all points of use (POU) serviced components such as cartridge filters was also compiled and the locations noted.

#### 2.2.4 Water Treatment Operator Interview

EGE contacted and interviewed the water treatment operator for the facility. The purpose of the interview was to determine the level of understanding the operator had regarding optimal conditions for equipment operation, and the procedures followed for regular and upset condition maintenance. The operator was also interviewed regarding their understanding of non-compliance procedures, signage, corrective action, reporting and communication, etc.

This task also included the compilation of all available on-site documentation by title and use. All logbooks, checklists or other documentation of inspection frequency, maintenance activities, water quality

measurement results or other activities performed on the non-potable and potable water systems, were photocopied and are included in the report.

#### 2.2.5 Potable Water Source Description

While on-site, EGE determined the raw water source used for the water distribution system. The raw water source was described in terms of its size, configuration, ownership, reliability and other characteristics indicated in the Checklist. EGE performed a vulnerability assessment of the raw water source to assess potential risks such as: proximity to environmental pollutants (septic fields, oil and gas wells, pastures and livestock operations, herbicide/pesticide applications, fuel systems, etc.); security of the source (secured access, monitored/unmonitored, potential for vandalism, potential for disruption); vulnerability to drought or flooding; and other site-specific issues as noted. Any potential secondary source that could be used as a back-up to the raw water source were also identified and similarly assessed.

#### 2.2.6 Well Technical Description

A detailed description of the groundwater well was provided. EGE reviewed the Alberta Water Well Information Database to obtain the borehole log and well installation details for the well. A full technical description of the well was provided that included the following required components:

- GPS coordinates;
- Outside diameter;
- Casing material and thickness;
- Cap and security features (bolts, locks, etc.);
- Stick-up measured above ground level;
- · Depth to the bottom of the well;
- Depth to water surface;
- Type and capacity of pump (if known); and
- Well recharge rate (if available).

EGE used a water level meter that was dedicated to potable water sources to reduce the potential for contamination at the well. To prevent cross-contamination between wells, the probe on the water level meter was disinfected between each well using an Alconox soap wash and distilled water rinse.

#### 2.2.7 Bottled Water Use

The number and type of bottled water distribution stations were recorded and shown on the site drawings. EGE assessed the effectiveness, and frequency of cleaning procedures, through inspection and interviews. Inspection included removing the bottle for visual inspection and photographs. Where maintenance and cleaning is performed by a bottled water service contractor, information on these procedures were requested directly from the contractor. Any signs, safety labels or other communication to the user were noted and photographed. The source of the bottled water was also identified, along with any available analyses of the water quality.

#### 2.2.8 Review Checklist

The data collected during the on-site activities was guided by the Checklist form provided by CBSA in the ToR. This Checklist form was completed in the field by EGE's assessment team, and before leaving the site, EGE staff reviewed the Checklist for any missing information and acquired this information before leaving or made arrangements for this information to be provided.

#### 2.2.9 Closing Assessment Meeting

Once all of the required information was collected, EGE conducted a closing meeting with the Facility Manager, by teleconference. This meeting conveyed appreciation for their assistance during the inspection and also included a review of outstanding items, such as the supply of any documents or information that was not available on-site but was agreed to be provided to EGE by the Facility Manager. Where there were outstanding information requests, EGE followed this up by electronic mail, with a written list of information required.

#### 2.3 POST-ASSESSMENT ACTIVITIES

The post-assessment activities included the completion of the Site-Specific Potable Water Quality Risk Assessment report and the Site-Specific Potable Water Management Plan.

#### 3.0 DESCRIPTION OF SITE CONDITIONS

A site reconnaissance was conducted by representatives of EGE and AE on October 26, 2012, which included a walk-through of the site, an inspection of the CBSA controlled buildings, water supply, treatment and septic systems, a cursory look at adjacent properties and interviews with Mr. Charlie Vegter, PWGSC Building Operator Maintainer and Mr. Lyle Stenger of Stenger's Plumbing and Heating Ltd., who was responsible for installation and maintenance of the water treatment system at the Wild Horse facility for the past eight years. Observations of the site and the adjacent properties at the time of the site inspection are documented through site photographs, as presented in Appendix B. Select photographs are also included throughout the report for illustrative purposes. Location and surrounding land use plans are presented as Figures 01 and 02, respectively. A scaled facility site drawing is presented as Figure 03.

#### 3.1 SITE AND SURROUNDING LAND USE DESCRIPTION

The Wild Horse Border Crossing facility is located on Provincial Highway 41, approximately 120 km south of Medicine Hat, Alberta and 20 km west of the Saskatchewan border. The 142 by 142 m property is occupied by a CPE (Customs Port of Entry) office building and small storage shed at the southeast corner, a residence and detached garage at the southwest corner (West Residence) and a second residence and detached garage/emergency generator building (East Residence) located in the south central area of the property. A RCMP communication tower is also located in the southeast corner of the site. The buildings occupy approximately 1.75% of the site, with the remainder of the site comprised of landscaped and naturally vegetated areas, and parking/driveway areas along the south boundary of the site.

Independent septic systems are installed at each of the two residences and the CPE building. The systems consist of: two dual-chamber fibreglass tanks (residences) and one dual-chamber concrete septic tank (CPE building); and septic ejector jets that discharge to the surface north of each building. There is also a fourth ejector jet northeast of the current CPE building ejector jet that is no longer being used. A previous wastewater study completed at the Wild Horse Border Crossing Facility in 2002, by Wardrop Engineering Inc. ⁽⁶⁾, indicated that the CPE building and east residence used the septic ejectors, while the west residence utilized a septic field located north of the building.

The septic tank and the ejector jet for the CPE building are located approximately 17 m west-southwest and 45 m north of the existing water well, respectively. The three septic ejector jets discharge directly to ground surface approximately 56 m north of the CPE building, 48 m north of the east residence and 37 m north of the west residence. The construction details and exact location of the septic field north of the west residence are not known, however, based on a previous site plan provided by CBSA, the field is shown to be approximately 20 m north of the building. The same site plan also illustrates two former inground septic fields located approximately 15 and 25 m north of the CPE building, which likely served both the east residence and the CPE Building.

The approximate locations of the in-ground septic fields and ejector jets are illustrated on Figure 03.

The surrounding land use consists of Range Road 23A and natural grass/pasture land to the west, natural grassland to the north, east and southwest, crop land to the southeast (U.S.), and the Port of Wild Horse U.S. Customs crossing located across Highway 41 south of the site. The nearest surface water body is a small creek located approximately 400 m northeast of the site.

Information provided by CBSA indicates that a landfill was located in the northeast corner of the property, however, the exact location is not known. The landfill was reportedly investigated by EBA in 2001, with two monitoring wells installed (MW1 and MW2), and later by Golder in 2004, with one background monitoring well installed (MW3). The monitoring well locations and suspected area of the former landfill are highlighted on Figure 03. According to an email, dated December 7, 2004, the reported selenium, uranium, sodium, manganese, chloride, sulphate and TDS concentrations from the 2001 and/or 2004 sampling programs (based on the summary table attached with the earlier e-mail) exceeded the drinking water criteria. However, it was concluded that the landfill was not the source of the groundwater exceedances, as the results from the background monitoring well were similar to the two down-gradient monitoring wells. On this basis the landfill was approved for decommissioning.

#### 3.2 FACILITY STAFFING, PUBLIC USE AND WATER SYSTEM AUTHORITY

The facility is currently staffed by four full-time CBSA customs inspectors. Public use of the facility is restricted to the administration area at the south end of the CPE building and public washroom accessed from the northeast exterior of the CPE building. On-site personnel indicated the Wild Horse Border Crossing Facility can receive up to 233 vehicles on a peak day. The average number of daily visitors was not provided by CBSA, however, it is expected that this number is substantially less than the 233 peak vehicles. The number of visitors using the washroom facilities is also expected to be even less. On the basis that the number of on-site staff and site visitors using the washroom facilities is less than twenty-five, the water system at Wild Horse would be classified as a "micro-system" (3).

CBSA is currently the water system authority for the facility. PWGSC personnel provide on-site management of the buildings and structures on the property. The RCMP communication equipment and tower are maintained independently of CBSA and PWGSC activities. On-site servicing of the water treatment system is provided by Stenger's Plumbing and Heating Ltd., a third party contractor based out of Medicine Hat, Alberta.

#### 3.3 RAW WATER SUPPLY

Historically, raw water for the Wild Horse Border Crossing Facility has been supplied by groundwater wells. Geological information presented on the water well drilling record (Appendix C), dated September 1989, indicates that the stratigraphy underlying the site includes up to 21 m of glacial-lacustrine sediments, consisting of undifferentiated sand and clay till deposits. The underlying bedrock is composed of sandstone, siltstone, mudstone and shale of the Oldman/Foremost Formations. The regional groundwater supply below Onefour, Alberta, which is located about 22 km northwest of Wild Horse, is from the sandstone bedrock (7).

The topography at the site and in the surrounding area is flat to slightly undulating. Overall, the topography at the site slopes slightly to the north, with the north-western area sloping to the northwest

and the north-eastern area to the northeast. Surface runoff appears to drain towards the east and west sides of the site, and the direction of the shallow groundwater flow is expected to follow the site topography. Regionally, groundwater is expected to flow towards Milk River Lake, which is located 1.2 km northwest of the site. The shallow and regional groundwater flow directions are shown on Figure 03.

Correspondence from the service contractor indicates that the former concrete septic tanks at the east and west residences used to leak, and were replaced with the current fibreglass tanks. In March 2006, the effluent pump in the concrete septic tank at the CPE building was also found to be defective. As a result, the effluent was pushed up and out of the septic tank, and onto the surrounding soil. It is unknown how long the raw sewage effluent was overflowing the tank or the potential impacts this may have had on the water supply. The service contractor recommended that the pump be replaced and reported that PWGSC would be arranging for this work to be done. There was no indication in the service records when this work was completed.

#### 3.3.1 Water Source Description

According to the Government of Alberta Water Well Database, there are seventeen water wells within a 2.5 km radius of the site. Ten of the wells were listed for domestic and/or livestock use, three were listed for livestock use only, and four were listed as use unknown. Four wells were listed in the database for the Canada Customs property, one dated 1928 (to a depth of 15.24 m), one dated prior to 1971 (to a depth of 106.68 m), one dated 1976 (to a depth of 18.29 m) and the most recent well dated 1989 (originally drilled to a depth of 30.48 m and later deepened to 91.44 m). A screen capture of the location plan from the well database is provided below, however, the well locations are not precise, since the wells are generally shown in the center of the quarter section or section that the well is located in. Copies of the well drilling reports are presented in Appendix C.

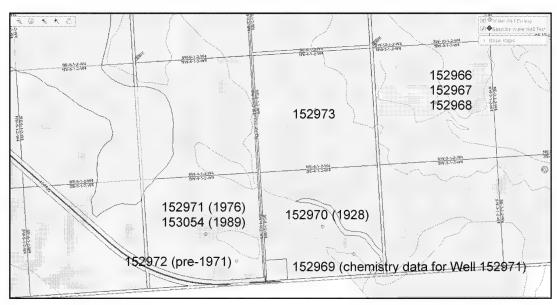


Plate 01: Plan showing the location of groundwater wells near the Wild Horse Border Crossing Facility. Well identification numbers shown correspond to the well records provided in Appendix C.

Three abandoned wells and one existing well were identified on the property at the time of the 2012 site inspection, and it is assumed that these correspond to the four wells listed in the database. However, with the exception of the 1976 and 1989 wells, there are no records indicating the exact location of the 1928 and pre-1971 wells. There are also no decommissioning reports available for any of the abandoned wells on the property. The locations of the three abandoned wells and the one existing well that were identified at the site are highlighted on Figure 03.

Currently, raw water at the site is supplied by the 1989 well (Well ID 153054), a 91.44 m deep well located approximately 17 m northeast of the CPE building. The well was originally installed in May, 1989 by Camfield Drilling Services Ltd., based out of Lethbridge, Alberta. The well was installed using air rotary methods and was deepened to 91.44 m in November 1989. The lithology of the well was described as 3 m of fine grained sand and silt, overlying clay till, containing some sandy sections, extending to a depth of 21.3 m. The overburden was underlain by multiple layers of shale, siltstone and sandstone, to the completion depth of 91.44 m, within the Verdigris Member (Foremost Formation). The deeper overburden (15.8 to 18.9 m) and the intermediate depth sandstone (58 to 59 m) were noted to have poor production and/or water quality.

The well is cased with a 16.81 cm outside diameter steel casing, which extends to a depth of 24.38 m and has a finished stick-up of 0.71 m. A 14.12 cm diameter steel liner was installed inside the steel casing to a depth of 60.96 m, with a secondary 0.10 m diameter steel liner installed to a final depth of 91.44 m below ground surface. The secondary liner is perforated between a depth of 85.34 and 91.44 m, with an open bottom. The annular seal, consisting of cement/grout, was placed from surface to a depth of 60.96 m. The formation log indicates that the well intake was installed within layers of siltstone and sandstone. A two hour test pumping program was completed after installation at a sustained pumping rate of 90.92 L/min, and from a withdrawal depth of 42.7 m and a starting static water level of 30.5 m. The water level after 120 minutes of pumping was 42.7 m. The well is located at UTM coordinates: 557358 E, 5427722 N, in Zone 12U. The water level in the well was measured on October 26, 2012 at 13.655 m below the top of the casing. The wellhead was secured with an aluminum cap attached with two screws and two bolts.

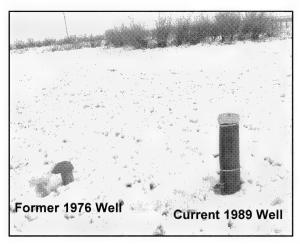


Photo 08: Former (left) and current (right)wells located northeast of the CPE building.

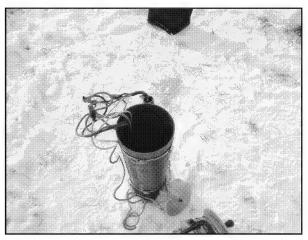


Photo 09: Submersible pump wiring at current well.

A photograph included in a previous Potable Water Assessment Report prepared by Golder Associates Ltd. ⁽⁸⁾, dated 2002, identifies the 1989 well with the casing completed at or near ground surface (see Photo 10). The date the surface casing extension was installed on the current well is unknown.

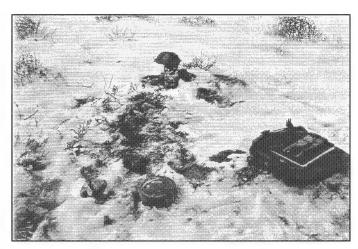


Photo 10: In-use and abandoned water wells (Golder, 2002).

As noted above, well records indicate that three older wells were drilled at the site (one in 1928, one pre-1971 and one in 1976) and three abandoned wells were observed on the property at the time of the 2012 site inspection. This included: the 1976 well, which is located approximately 1.5 m west-southwest of the existing active well and northeast of the CPE building (Photos 08 and 09); an abandoned well on the east side of the west residence; and an abandoned well on the west side of the east residence. These wells are shown on Figure 03. It is assumed that the abandoned wells near the residences are the 1928 and pre-1971 wells, however, as previously noted, there are no records indicating the exact location of these two wells. A site plan from the 2002 Golder report, Plate 02 below, shows the two abandoned wells near the east and west residences, and one existing well northeast of the CPE building.

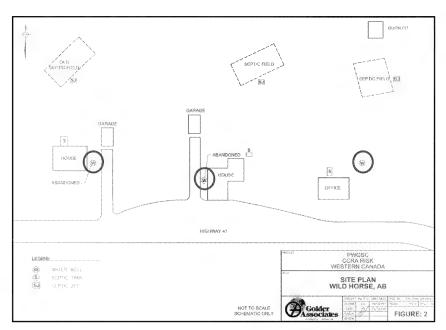


Plate 02: 2002 Site Plan (Golder) showing two abandoned wells (left) and one active well (right).

A 2000 site plan by Cochrane, Plate 03 below, identified only two wells on the property, including an abandoned well immediately east of the west residence and a second well located on the east side of the CPE building. The well east of the CPE building is not shown on any other site plans, nor was evidence of this well observed during the site inspection in 2012. It may be that this well was meant to show the active well located northeast of the CPE building, but was drawn in the wrong place. One abandoned and one active well are also shown on a 2002 site plan by Wardrop, Plate 04 below, but in reverse order.

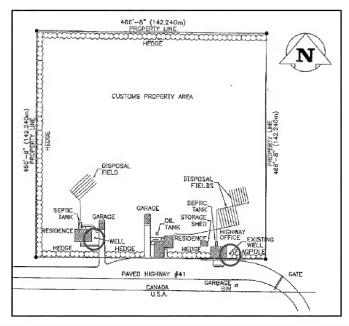


Plate 03: 2000 Site Plan (Cochrane) showing one abandoned well (left) and one active well (right).

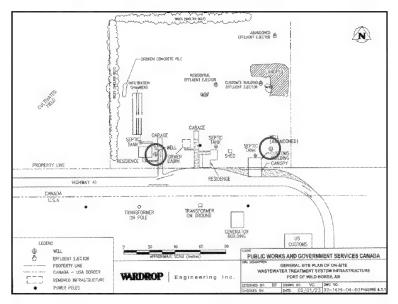


Plate 04: 2002 Site Plan (Wardrop) showing one abandoned well (right) and one active well (left).

The 1928 drilling report indicates that a well (Well ID 152970) was completed to a depth of 15.24 m below grade and was used by "people around the Customs House for the household". There is no indication of the well location, however, it is presumed to be one of the two wells located near the east and west residences.

Information presented on the 1971 well record is for chemical analysis of an on-site well, referred to in this report as the pre-1971 well. The record indicates that there were three wells on the property in 1971, including one for the house and two for the Customs Office (CPE building). Based on the date of the well record, the two wells at the CPE building mentioned in the 1971 report could not be the 1976 or 1989 wells currently located northeast of the CPE building, and therefore, it is possible that there is an additional abandoned well present near the CPE building or there is an error on the well record. The 1971 chemistry report is for a pre-existing well that was completed to a depth of 106.68 m below ground. The location of this well cannot be confirmed, however, it is assumed to be one of the two abandoned wells that were identified near the east and west residences.

The 1976 drilling report indicates a new well was completed to a depth of 18.29 m below grade, with a 11.43 cm diameter steel casing and a slotted stainless steel screen from a depth of 16.76 to 18.29 m. This well was reportedly grouted between surface and a depth of 16.76 m. The report indicates a submersible pump was installed within the well, which produced 63.65 l/min. Based on this information and observations during the 2012 site inspection, the 1976 well is the abandoned well located 1.5 m west-southwest of the 1989 well, which is situated northeast of the CPE building (see Photo 08). This well likely replaced one or more of the wells noted in the 1971 drilling report.

The abandoned wellhead at the west residence was suspected to be under a concrete cover located in a gravel surfaced area between the driveway and residence. The location of the abandoned well at the west residence is consistent with the location presented on the 2000 and 2002 site plans.

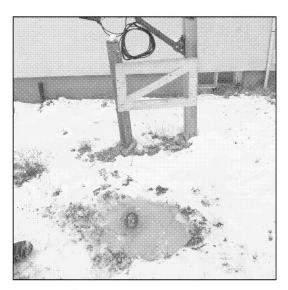


Photo 11: View of suspected abandoned well located under concrete cover on the east side of the west residence.

The abandoned wellhead at the east residence was located within a separate pump/well room accessed from the basement and is consistent with the abandoned well that is shown on the 2002 site plan. Abandoned piping configurations observed within the basement areas of both residences suggests that the former wells were equipped with external jet-type pumps.



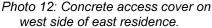




Photo 13: Well/pump room accessed from basement of east residence.

Based on the records presented in the Government of Alberta Water Well Database, previous site plans by others and the observations made at the time of the 2012 site inspection, it is assumed that there are three abandoned wells (1928, pre-1971 and 1976) and one existing active well (1989). However, based on the 2000 Cochrane site plan and note on the 1971 well record, it is possible that there is one additional abandoned well on the east side of the CPE building, although this is not confirmed with an individual well record or site observation.

The raw water pipeline between the current well and the CPE building is a 25 mm HDPE pipe, and consists of new and old sections of pipe. The pipe enters the northeast corner of the CPE building, where it is reduced down to a 19 mm copper pipe after passing through a flow restrictor. The raw water is then passed through a POE treatment system.

Potable water for the Wild Horse Border Crossing Facility is provided through the supply of 20 L bottled water containers obtained from Pure & Simple Water in Lethbridge, Alberta. The CPE building and residences each have individual water cooler dispensers for use by CBSA staff.

#### 3.3.2 Treatment System

Various levels and types of water treatment have reportedly been carried out at the Wild Horse Border Crossing Facility since the current well was installed. The following table provides an overview and timeline of the water treatment processes that have been used, including the type of equipment and corresponding Points of Use (POU) at the site.

Date	Treatment	Location / Point of Use (POU)	
March 2004	Untreated Softener, RO, UV Sterilizer	CPE, Res1, Res2 Bottling Station (CPE Basement)	
Fall 2004 ⁽⁹⁾	Shock Chlorination	Well	
Pre-2005	Untreated	CPE, both residences	
March 2005 ⁽⁹⁾	Untreated Filtration, softener, RO	CPE, both residences Bottling Station	
September 2005 (10)	Softener RO	CPE, both residences Bottling Station	
January 2006	Shock Chlorination	Well	
March 2006	Filtration, softener, UV RO	CPE, both residences Bottling Station	
December 2008 (11,12)	Softener Untreated	CPE Both residences	
December 2010 (13,14)	Filtration, iron removal, softener, UV	CPE, both residences	
September 2011	Filtration, softener, tannin removal, UV (plus RO at bottling station only)	CPE, both residences  Bottling Station	
		Well and Distribution System	

The Point-of-Entry water treatment system is located in the northeast corner of the basement in the CPE building, as shown on Figure 04. The raw water enters the CPE building through the basement wall in the northeast corner near the floor. The raw water supply is connected to a hydro-pneumatic tank then flows through a multimedia filter to reduce turbidity. Following the multimedia filter, the water then passes through an iron guard softener for hardness and iron reduction, and then through a second set of resin beds for tannin removal (to improve water clarity for the ultraviolet (UV) unit). The last process in the system is a UV reactor for pathogen inactivation. The two ion exchange systems (the Iron Guard Softener and the Tannin Removal System) are both dual vessel arrangements that operate in a duty-standby mode; when one vessel is regenerating, the other can still treat water.

This system supplies all water to the CPE building and the two residences. This 30 liter-per-minute water treatment system is designed to reduce turbidity, hardness, iron and manganese. The UV reactor is intended to provide a pathogen barrier, but in actuality it is not technically rated for this application.

The system was deemed non-potable at the time of the site inspection due to a positive coliform result in the distribution system after it had passed through the treatment equipment. The operator, Mr. Lyle Stenger, indicated that the contamination was likely the result of the UV reactor being left in a by-pass mode.

A stand-alone reverse osmosis (RO) system is also in place next to the water treatment system. This provides RO water to the humidifier on the furnace and has historically been used to provide a source of purified water for the bottled water dispensers. A detailed plan of the treatment area and a process flow diagram are provided on Figures 05 and 06, respectively. The following is a summary of the treatment equipment on site.

Equipment Description	Year Installed	Quantity	Manufacturer	Model Number	Dimensions (mm)
Well Pump	2005	1	Goulds	7LS05412	n/a
Hydro-pneumatic Tank	2005	1	Jet-Rite 2	PJR 6	8.0 litres
Pressure/Pump - Control	2005	1	Controlpres	CP115	n/a
Multi Media Filter	2005	1	Novatek	NMMF10	250 x 1200
MMF Control Valve	2005	1	Fleck	2150	n/a
Iron Guard Softener	2011	2	Novo	CDA-30	230 x 1220
Softener Control Valve	2011	1	Fleck	9100 XT	n/a
Iron Guard Brine Tank	2011	1	USFilter	n/a	550 x 900
Tannin Removal	2012	2	Novo	COD-20	300 x 1300
Softener Control Valve	2012	1	Fleck	9100 XT	n/a
Brine Tank	2011	1	USFilter	n/a	550 x 900
UV Reactor	2012	1	Sterilight	SCM-320	n/a
Reverse Osmosis	2004	1	US Filter	WGR 300	n/a

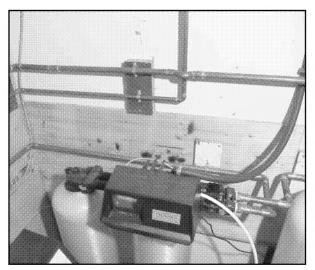






Photo 15: Reverse Osmosis system.